

CUTANEOUS MEDICINE

LOUIS A. DUHRING

PART II.

CLASSIFICATION-ANÆMIAS-HYPERÆMIAS
INFLAMMATIONS

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CUTANEOUS MEDICINE

A SYSTEMATIC TREATISE

ON THE

DISEASES OF THE SKIN

BY

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PART II.

CLASSIFICATION—ANÆMIAS—HYPERÆMIAS—INFLAMMATIONS



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CLASSIFICATION.

THE classification of the diseases of the skin has been during the past hundred years, since the writings of Plenck (1776) and of Willan (1808), a subject of much discussion, with the result that many schemes have been put forth, differing materially, according to the point of view of the observer. The diseases have been classified at various epochs in accordance with the anatomical lesions, with the parts of the integument involved (as, for example, the epidermis, the corium, the appendages), with the cause, known or supposed, with the general pathology, and, finally, in various other ways, for the most part theoretical or artificial. A discussion of these several plans, some of which involve theory to a considerable extent, would be out of place in a work like the present, which aims to be practical in its bearings.

OBJECT OF CLASSIFICATION.

The object of a classification of the diseases affecting the skin, it seems to the author, should be to group the numerous and diverse cutaneous manifestations in such a manner that the scheme as a whole will prove of the most practical use. Especially important is it that the diseases be so arranged in classes, divisions, and groups that their recognition when they are met with in practice shall be easy or possible. The diagnosis of the commoner diseases—more definitely, of types of diseases—was rendered comparatively easy by the classifications of Plenck and of Willan, in which the predominant anatomical lesions were made the basis of the arrangement. Thus, psoriasis was grouped as a squamous disease, pemphigus as a bullous disease, and so on. The principal primary lesions occurring in types of the disease were thus emphasized and the plan utilized for diagnostic purposes. This classification, though elementary and imperfect, has proved of distinct value, as the history of dermatology during the past century shows. It has formed the groundwork, wholly or partly, of numerous accepted classifications.

ALIBERT, WILSON, AND HEBRA.

Alibert,¹ in France, was the first writer to bring forward a so-called natural system of classification in cutaneous medicine, the diseases being grouped according to their inherent natural affinities. They were figuratively represented as a tree ("arbre des dermatoses"), the boughs, branches, and twigs of which represented genera, species, and diseases.

The scheme elaborated by Erasmus Wilson, in England (1842), had

¹ *Description des Maladies de la Peau.* 45 col. pl., 208 pp. fol. Paris, 1806.

for its main idea the anatomical structure of the skin, but followed the lines of anatomy too closely to be of much practical value.

A distinct advance was made by Rokitansky and F. Hebra, in Vienna, about 1845, when the latter put forth the well-known scheme which has since borne his name, based upon anatomy, physiology, pathological anatomy, and etiology. The author, impressed with the value of that scheme, adopted it with some modifications and changes in his several earlier works on the diseases of the skin,¹ and he still believes that its tenets are in the main sound, and that it is of practical value to both the clinician and the pathologist.

AUSPITZ, BRONSON, AND UNNA.

In the thoughtful, suggestive, and elaborated classification put forth by H. Auspitz,² of Vienna, the attempt is made to form natural groups,—that is, groups characterized by a series of essential qualities. The clinical unity of the groups of diseases and the diseases themselves are regarded as alone decisive in determining the principles of classification. Individual general pathological factors (such as the cause, the localization, the anatomical and functional factors, the symptoms in detail, the course and termination) are placed in the front rank only when they actually coincide with the real nature of the class, group, or disease in question. The following is the outline of this system: Class I. Simple inflammatory dermatoses (dermatitides simplices). Class II. Angioneurotic dermatoses. Class III. Neuritic dermatoses. Class IV. Stasic dermatoses. Class V. Hemorrhagic dermatoses. Class VI. Idioneuroses of the skin (functional anomalies of the cutaneous nerves without trophic changes in the skin). Class VII. Epidermidoses (anomalies of development of the skin of an epithelial origin and type). Class VIII. Chorioblastoses (developmental anomalies of the skin of connective-tissue origin and type). Class IX. Dermatomycoses.³

E. B. Bronson,⁴ of New York, presents the following classification, which is based largely upon the ideas promulgated in Auspitz's scheme: Class I. Idioneuroses, comprising the neuroses pure and simple,—the sensory and motor neuroses. Class II. Angioses, defined as disorders of the vascular apparatus, and embracing the common effects of engorgement, isehæmia, transudation, and inflammation. Class III. Epidermidoses, containing not only anomalies of growth, but also disorders affecting the nutrition of the epidermis, among which are certain inflammatory affections that have their seat in the mucous layer of the epidermis. The main point in this class is the anatomical structure involved.

¹ A Practical Treatise on Diseases of the Skin. Philadelphia, 1877, 1881, and 1882.

² System der Hautkrankheiten. Wien, 1881. See also Ziemssen's Hand-Book of Skin Diseases. New York, 1885, p. 131.

³ This classification has been carefully analyzed by E. B. Bronson in the Journal of Cutaneous and Venereal Diseases, vol. ii. Nos. 6 and 7, 1884.

⁴ Jour. Cut. and Gen. Urin. Dis., vol. v., Oct. 1887.

Class IV. Cryptoses, comprising diseases of the sebaceous and sweat follicles, hair, and nails. Class V. Desmoses, embracing the various anomalies of growth of the connective tissue.

P. G. Unna¹ considers the diseases of the skin, mainly from the standpoint of the pathologist, under: I., Anomalies of circulation; II., Inflammations (*a*, traumatic; *b*, neurotic; *c*, infectious); III., Progressive disturbances of nutrition; IV., Regressive disturbances of nutrition; V., Deformities; VI., Saprophytes and foreign bodies.

THE AUTHOR'S CLASSIFICATION.

It is believed that a modification and elaboration of the author's old classification, already referred to, may be made with advantage. By the plan presented the many and varied diseases which occur in the integument are arranged so as to be of use in practice. It differs from the author's earlier plan in the omission of an etiological class and in other ways. In the present state of our knowledge, it will serve the purposes of dermatology best if questions of etiology, important though they are, be excluded from the framework of a classification, place being elsewhere afforded for their recognition. In doing this their great importance is not undervalued. The student must become acquainted with the cutaneous manifestations of disease, with the lesions and other symptoms, before he can understand their etiology and their intimate pathology. This applies particularly to the inflammatory diseases. Prominence is therefore given in the classification to clinical features and to normal anatomy as well as to pathological anatomy. The diseases are arranged in such a manner that their chief clinical characters are in many instances grouped and brought forward prominently. The clinician and the pathologist must labor together, one supporting the other. The diseases involving the appendages of the skin specially or solely are considered in the several classes and divisions where they appropriately belong. The appendages are a part of the integument, and in a pathological classification cannot well be separated from it. The plan presented deals specially with the skin. It is founded upon pathology and pathological anatomy. Well defined diseases only are introduced; hence it is unencumbered. It is believed to be fairly consistent, and is simple. The microscope plays a very important part in the elucidation of cutaneous diseases, and the classification receives support in most instances from this valuable aid. It is through this instrument principally that the subject matter has been elaborated in the past; it is to it that we have a right to look for further revelations in the future.

¹ Die Histopathologie der Hautkrankheiten. Berlin, 1894. [Translated into English by Dr. Norman Walker, Edinburgh, 1896.]

CLASS I.

ANÆMIÆ—ANEMIAS.

[*Transient or Persistent, General or Local.*]

CLASS II.

HYPERÆMIÆ—CONGESTIONS.

[*Process Congestive, Diffuse or Circumscribed chiefly Superficial.*]*Predominant Lesions.*

ERYTHEMA HYPERÆMICUM.	} Active.	} Erythematous.
LIVIDO, CYANOSIS.	} Passive.	

CLASS III.

EXSUDATIONES—INFLAMMATIONS.

[*Process Inflammatory, Diffuse or Circumscribed, Superficial or Deep-seated.*]*Predominant Lesions.*

ERYTHEMA EXSUDATIVUM.	}	Erythematous.
ERYTHEMA PERNIO.		
ERYTHEMA EXSUDATIVUM MULTIFORME.		
ERYTHEMA NODOSUM.		
PELLAGRA, ACRODYNIA.		
URTICARIA.	}	Erythematous, Œdematous.
URTICARIA PIGMENTOSA.		
ŒDEMA.		
ECZEMA.	}	Erythematous, Papular, Vesicular, Pustular, Squamous, or Multiform.
IMPETIGO.		
IMPETIGO HERPETIFORMIS.	}	Pustular.
ECTHYMA.		
DERMATITIS HERPETIFORMIS.	}	Vesicular, Bullous, or Pustular.
PEMPHIGUS.		
POMPHOLYX.		
HERPES SIMPLEX.		
HERPES ZOSTER.		

LICHEN.				
PRURIGO.				} Papular.
ACNE.				
SYCOSIS.				} Papular, Tubercular, or Pustular, involving Sebaceous Glands or Follicles.
PSORIASIS.				
PITYRIASIS RUBRA FOLLICULARIS.				
PITYRIASIS RUBRA.				
DERMATITIS EXFOLIATIVA.				
PITYRIASIS ROSEA.				} Erythemato-Squamous.
ERYSIPELAS.				
				} Erythematous, Œdematous.
MORBILLI.				
RUBELLA.				
SCARLATINA.				
				} Erythematous, Maculo-Papular.
VARIOLA.				
VACCINIA.				
VARICELLA.				
				} Vesicular, Pustular.
DERMATITIS MEDICAMENTOSA.				
DERMATITIS VENENATA.				
DERMATITIS CALORICA.				
DERMATITIS TRAUMATICA.				
DERMATITIS NEUROPATHICA.				
				} Due to Drugs, Poisons, Caloric, Trau- matism, etc.
				} Varied, Multiform, Superficial or Deep-seated.
GANGRÆNA.				
FURUNCULUS.				
CARBUNCULUS.				
EQUINIA (GLANDERS).				
ANTHRAX (PUSTULA MALIGNA).				
				} Varied, Multiform, Suppurative, Necrotic, Deep-seated.
TINEA TRICHOPHYTINA (TINEA CIRCINATA, TINEA TONSU- RANS, TINEA SYCOSIS).				
TINEA FAVOSA.				
TINEA VERSICOLOR, TINEA ERYTHRASMA, TINEA IMBRI- CATA.				
ACTINOMYCOSIS, MYCETOMA.				
				} Due to Phyto- parasites.
				} Erythematous, Squamous, Multi- form, involving Epidermis, Fol- licles, Hair, or Nail.
				} Nodose, Ulcerative, Deep-seated.
PEDICULOSIS.				
SCABIES.				
DRACUNCULOSIS.				
				} Due to Zoo- parasites.
				} Varied, Multiform, Superficial or Deep-seated.
ONYCHIA.				
				} Involving Nail.

CLASS IV.

HÆMORRHAGIÆ—HEMORRHAGES.

[*Process Hemorrhagic, Diffuse or Circumscribed, Superficial or Deep-seated.*]

PURPURA.

Structure chiefly involved.
 } Corium, Connective Tissue.

CLASS V.

HYPERTROPHIÆ—HYPERTROPHIES.

[*Process Hypertrophic, Formative, Diffuse or Circumscribed, Superficial or Deep-seated.*]

LENTIGO.

CHLOASMA.

NÆVUS PIGMENTOSUS.

Structure chiefly involved.
 } Pigment.

CALLOSITAS.

CLAVUS.

ICHTHYOSIS.

VERRUCA.

MOLLUSCUM EPITHELIALE.

CORNU.

} Epidermis.

COMEDO.

MILIUM.

CYSTIS SEBACEA.

KERATOSIS PILARIS.

KERATOSIS FOLLICULARIS.

} Follicles, Sebaceous Glands.

HYPERTRICHOSIS.

NÆVUS PILOSUS.

} Hair.

ONYCHAUXIS.

} Nail.

ELEPHANTIASIS.

} Corium, Connective Tissue.

CLASS VI.

ATROPHIÆ—ATROPHIES.

[*Process Atrophic, Retrogressive, Diffuse or Circumscribed, Superficial or Deep-seated.*]

ALBINISMUS.

VITILIGO.

Structure chiefly involved.
 } Pigment.

ATROPHIA CUTIS PROPRIA.	}	Corium.
XERODERMA PIGMENTOSUM.		
STRIÆ ET MACULÆ ATROPHICÆ.		
MORPHEA.		
SCLERODERMA.		

ATROPHIA PILORUM PROPRIA, TRICHORRHEXIS.	}	Hair.
ALOPECIA.		
CANITIES.		

ONYCHATROPHIA, LEUCONYCHIA.	}	Nail.
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CLASS VII.

NEOPLASMATA—NEW FORMATIONS.

[*Process Neoplastic, Benign or Malignant, Diffuse or Circumscribed, chiefly Deep-seated.*]

		<i>Structure chiefly involved.</i>	
FIBROMA.	}	Corium, Connec- tive Tissue.	}
NEUROMA.			
CICATRIX.			
KELOID.			
XANTHOMA.			
MYOMA.	}	Muscle.	
ANGIOMA, NÆVUS VASCULOSUS, TELANGIECTASIS.	}	Blood-vessels.	
LYMPHANGIOMA.	}	Lymph-vessels.	
ADENOMA.	}	Glands.	
TUBERCULOSIS, SCROFULOSIS, LUPUS VULGARIS.	}	Corium, Connec- tive Tissue.	
LUPUS ERYTHEMATOSUS.			
RHINOSCLEROMA.			
SYPHILIS.			
FRAMBŒSIA (YAWS), VERRUGA PERUANA.			
LEPRA.			
CARCINOMA, DERMATITIS PAPILLARIS MALIGNA (PAGET'S DISEASE).			
SARCOMA.			
GRANULOMA FUNGOIDES.			

CLASS VIII.

ANOMALIÆ SECRETIONIS GLANDULARUM—ANOMALIES
OF SECRETION OF THE GLANDS.

[*Glands Involved Functionally.*]

A. GLANDULARUM SUDORIPARARUM—SWEAT GLANDS.

	<i>Predominant Process.</i>
HYPERIDROSIS. BROMIDROSIS. CHROMIDROSIS. HÆMATIDROSIS. URIDROSIS. ANIDROSIS.	} Disordered Secretion without Structural Change.
SUDAMEN. HIDROCYSTOMA. MILIARIA.	

B. GLANDULARUM SEBACEARUM—SEBACEOUS GLANDS.

SEBORRHŒA.	} Increased or Altered Secretion.
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CLASS IX.

NEUROSES—NEUROSES.

[*Sensory Diseases, Functional, without Primary Lesions.*]

	<i>Chief Symptoms.</i>
HYPERÆSTHESIA. DERMATALGIA.	} Increased or Painful Sensation.
PRURITUS.	
ANÆSTHESIA.	} Decreased Sensation.

PART II.

SPECIAL DISEASES.

CLASS I.

ANÆMIÆ—ANÆMIAS.

GENERAL OBSERVATIONS.

ANÆMIA OF THE SKIN is characterized by a deficiency in the normal amount of blood in the integument, or by an altered state of this fluid. In the latter case there may exist a lack of the relative number of red blood-corpuscles or an increase in the number of the white corpuscles, as occurs in pseudoleucæmia, leucæmia, and leucocythæmia. Anæmia of the skin gives rise to a pale flesh or a grayish or whitish color, as well as in some cases to other peculiarities of the integument, the latter being chiefly due to changes incident to altered nutrition. The color varies somewhat with the causes, being in some instances blanched or corpse-like, or dingy-white or dirty-yellowish, and earthy. In some cases the structure is normal and smooth, firm or soft, or flabby, while in other instances it may be slightly oedematous or waxy. Diminished temperature occurs in anæmia, variable in degree, together with at times morbid sensations, such as pricking, formication, numbness, anæsthesia, and even pain. Sometimes, where innervation is impaired, the skin is cool or cold, or it may be moist or oily. It may also be drier and harsher than normal, or slightly scaly.

TRANSIENT ANÆMIA.

Anæmia of the skin occurs under varied circumstances either as a transient or as a persistent or permanent condition. It gives rise to no primary cutaneous lesions, although it is characterized by symptoms of coloration, and also in some instances by textural changes secondary to the condition. The most striking example of transient anæmia occurs in connection with loss of blood from the general circulation, as in the various forms of HEMORRHAGE, especially in those which take place suddenly. Pallor of the skin due to absence of blood also occurs in OEDEMA, where the skin becomes pale, shining, and stretched. Both the evanescent and the persistent anæmias influence the nutrition of the integument, and consequently affect the state of the epidermis, and also

pigmentation. Where this is defective, owing to various general diseases as well as to diseases of special internal organs, the epidermis (especially of the extremities) may become dry and desquamative, as in the so-called *PITYRIASIS TABESCENTIUM*.

TRANSIENT ANÆMIA is noted as a result of disturbed innervation from emotional states, as *FEAR*, and *ANGER*. The same condition may follow disturbances of nerve-centres, as noted in *NERVOUS CHILL*, and *SHOCK*, and in certain psychical states, as *FAINTING* and the like. It may also be induced reflexly, as by a blow over the abdomen or by some slight or trivial operation or wound, as the prick of a needle. Various mechanical agents, as compression with bandages, especially the solid rubber bandage, may cause disturbed circulation and temporary anæmic conditions, with sometimes numbness and perverted innervation, which occasionally may be lasting. I have known not only such symptoms but permanent loss of motor power to follow the use of the rubber bandage. A chronic lupus vulgaris of the arm, occurring in an anæmic young woman, is called to mind, which after the application of the bandage to the forearm was scraped. Upon removal of the bandage numbness and pricking sensations and palsy were noted, and the limb remained powerless for at least several years afterwards.

PERSISTENT ANÆMIA.

Chronic anæmia occurs as a symptom in connection with certain general diseases, such as *CHLOROSIS*, *PERNICIOUS ANÆMIA*, and *PSEUDOLEUCÆMIA*, and accompanies the later stages of *TUBERCULOSIS* and *SCROFULOSIS*. As a result of trophic disturbances partial absence of blood in the skin occurs in such diseases as *MORPHŒA*, *SCLERODERMA*, and *ALOPECIA AREATA*, where there is an arrest of normal innervation. A more positive form of absence of blood in the skin is observed in *CICATRICAL GROWTHS*, due to partial or complete obliteration of the blood-vessels in the skin and connective tissue, as occurs in the scars of *SCROFULA* and *SYPHILIS*, which may be extensive and occupy large areas.

GENERAL PATHOLOGY.

Concerning the general pathology of cutaneous anæmia, circulatory disturbances in one form or another, induced by numerous conditions and causes, are responsible for the several forms met with. The influence of the nervous system, and especially of the vaso-motors, in its production is in some cases striking. Localized areas of deficient blood-supply may be derived from the prolonged application of such substances as ice, ether, chloroform, causing through the nerves contraction and paresis of the capillaries. Exposure to extreme prolonged cold weather and humidity is also a source of anæmia and consequently of defective nutrition of the skin, leading to disease, and secondarily even to hyperæmia, as occurs in *ROSACEA* from cold, and in *CHILBLAIN*.

Faulty innervation of localized areas and chronic anæmia, leading to

disease of secretion, especially of the sebaceous system, is observed in some forms of SEBORRHEA, COMEDO, ACNE, ACNE ROSACEA, and ROSACEA. Thus it will be noted that distinctly opposite pathological states may succeed each other or be associated. An analogous condition is occasionally noted in connection with the processes of atrophy and hypertrophy, as in VITILIGO, where they are often tolerably evenly balanced; also in certain diseases of the hair, where both atrophy and hypertrophy progress simultaneously.

IMPORTANCE IN DIAGNOSIS.

From a diagnostic point of view anæmia of the skin is of importance in influencing not only the coloration of cutaneous lesions, but the process itself. This is noted in a striking manner in SEBORRHEA of the face and body, where the hyperæmia may be slight. The color of the skin also serves as an index to the changes that are occurring in the various internal tissues and organs, and may be of value from a prognostic point of view. Pallor of the surface occurring in the course of certain acute general or systemic diseases, as the ACUTE EXANTHEMATA, indicates that there has been a determination of blood to internal organs,—an observation which in some cases must be looked upon as unfavorable. A similar condition of the whole integument and of the lesions may often be observed in COMEDO, SYPHILIS, and other diseases. The peculiar pale and slightly pigmented skin of certain malignant and wasting diseases, as TUBERCULOSIS and CARCINOMA, is also of value as an aid to diagnosis.

For additional information on the subject of cutaneous anæmia, the reader is referred to the chapter on the general pathology of the skin.

CLASS II.

HYPERÆMIÆ—HYPERÆMIAS.

ON HYPERÆMIAS IN GENERAL.

In this class, known also as CONGESTIONS, are grouped those DISORDERS WHICH ARE CHARACTERIZED BY THE PRESENCE OF AN ABNORMAL QUANTITY OF BLOOD IN THE VESSELS SUPPLYING THE SKIN, WITHOUT THE PRESENCE OF INFLAMMATION. They may arise from a number of causes, and present many and varied lesions upon the integument. In considering the subject here the symptoms and general pathology will be dwelt upon rather than the causes, which are very numerous.

SYMPTOMS AND PATHOLOGY.

The symptoms of hyperæmia, or congestion, as seen upon the skin are characterized by redness, variable as to color, all tints and shades being met with, from pale rose to bright red, dark red, or bluish-red. It may be uniformly or otherwise distributed, diffusely or in circumscribed areas. The hyperæmias disappear under pressure, but the degree to which this occurs depends somewhat on the nature of the causes and upon other circumstances. They manifest themselves in a variety of forms or patterns, which are usually without regular outline or shape: thus, the spots may be of the size of peas or beans, of large coins, or of a hand, or may occupy even more extensive areas. The terms MACULA, ROSEOLA, and ERYTHEMA are employed to express the shape, form, or outline of the hyperæmia, roseola signifying a pea- or bean-sized lesion, erythema generally implying a more extensive or a diffused manifestation. In place of the lesions being of a uniform color or pattern, they sometimes take on a FIGURED, MOTTLED, or MARBLED appearance.

To the touch the skin is generally not much or at all altered, although it may be thicker and less pliable and movable than normal. In some forms more or less œdema may coexist. The temperature is usually slightly elevated, but it may be natural, or, on the other hand, may be even below normal. The subjective sensations are seldom marked, and may be entirely absent. Not infrequently there exists a sense of heat or slight tingling, itching, or burning, and some of the passive congestions in particular may be painful. The course is variable, being usually acute, and not infrequently evanescent or fugitive, so that the lesions may disappear rapidly; in other cases, much more rarely, it is chronic, and occasionally it is even persistent. Vaso-motor vascular disturbances occasioning variable degrees of redness, diffuse or in patches,

occur especially on the face and neck, accompanied with a sense of fullness and heat, which are sometimes intense; but they are also met with frequently on the hands and upper extremities, and on the feet and legs.

The seat of the process is in the superficial strata of the skin, generally in the papillary layer of the corium, and also sometimes about the follicles, the finest capillaries being injected. The vessels are acted upon by the nervous centres and through the vaso-motor system. Their innervation is markedly influenced through the medium of the brain, the spinal cord, and the sympathetic system. Thus, not only are the congestive hyperæmias and the exudative erythemata caused and controlled by this means, but other forms of cutaneous inflammation are amenable to the same influences.

Cutaneous angioneuroses are characterized by diffused pallor or redness of the skin, being due to diminished or increased innervation of the capillaries, the causes in many cases being central, as in connection with the emotions; in other cases with such diseases as epilepsy and hysteria. S. Weir Mitchell¹ relates the case of a lady both of whose legs were as red as blood in excess could make them, which came on after many months of varied hysterical symptoms. Excepting an imperfect paraplegia, the latter symptoms had all passed away, but whenever she sat up her legs filled with blood and looked as if they might burst. There was no pain, and when her limbs were elevated the redness gradually disappeared. Upon improvement of the constitutional state the local paralysis of the vessels gradually disappeared.

At times hyperæmia is distinctly fugacious, coming on and disappearing within a very short period. As a rule, no structural changes take place in the skin, although sometimes more or less desquamation, and occasionally pigmentation, follow the process, as in the case of the exudative hyperæmias.

Flushing or pallor often accompanies sudden and irregular action of the heart, in some cases the former, in others the latter, or they may alternate. In this connection the common symptom flushing or circumscribed redness of one or both cheeks in pneumonia may be referred to. The patch sometimes shows a defined border, and is usually brighter than that met with in typhoid fever, though not so bright as the hectic flush of phthisis. It generally appears early, and may precede the other symptoms. Sometimes it is confined to one cheek, as in Jaccoud's² own case and in others observed by him. Wells³ believes that local pressure often locates the redness.

The line where the process of hyperæmia ceases and inflammation

¹ Lectures on Diseases of the Nervous System, especially in Women. Phila., 1881, p. 185.

² Path. Intern., tome i. p. 28. Paris, 1870.

³ "On Pneumonic Fever—its Symptomatology," Jour. Amer. Med. Assoc., May 26, 1894.

begins is often difficult to determine. But there are met with, nevertheless, many conditions, due to varied causes, which show no disposition even under favorable circumstances to go beyond the stage of hyperæmia. On the other hand, in a multitude of cases hyperæmia is but the first stage of true inflammation, as seen in many of the exudative erythemata. In considering hyperæmic affections, however, it is necessary to draw the lines as sharply as possible, and to eliminate from this group all those where appreciable exudation has occurred. Hyperæmia tends naturally to lead to various other pathological processes which affect the skin, and it also favors changes in the nutrition of the skin, thus conducing directly or indirectly to numerous diseases.

ACTIVE AND PASSIVE HYPERÆMIAS.

They may be classified into ACTIVE, or "fluxionary," and PASSIVE, or "static." Both forms may, further, very properly be divided into the IDIOPATHIC and the SYMPTOMATIC. The active hyperæmias are characterized by a more rapid circulation of blood in the capillaries, giving rise to rose or bright red lesions and elevation of temperature. The symptoms are those of cutaneous irritation, more or less swelling with heat, tingling, or slight itching, being not infrequently present.

ACTIVE HYPERÆMIAS.

IDIOPATHIC ACTIVE HYPERÆMIAS are, in a strict sense, local affections. They include those disorders which are occasioned by the direct application of irritating agencies to the skin, as mustard and the like. SYMPTOMATIC ACTIVE HYPERÆMIAS, on the other hand, are due to general disturbance or irritation of some organ, or of the system at large, or of the nerve-centres. This usually has its origin in some region of the body distant from the skin.

FLUSHING AND MORBID BLUSHING.

Active hyperæmia is typically exemplified in FLUSHING (ARDOR FUGAX, ARDOR VOLATICUS), in which the most marked symptoms are a rush of blood to the skin and a sense of heat, due to what may be termed a nerve-storm, which may be extremely complex in its nature. The flush is characterized by the presence or absence of heat, cold, and sweating, the mutual relations and the order of these phenomena being variable. Closely allied to flushing is BLUSHING, which is characterized in all cases by being produced by some emotion, as shame or modesty, whereas flushing may be due to numerous exciting and other causes altogether independent of emotional states. Charles Darwin regarded blushing as the most human of the various expressions, the condition not occurring in the lower animals. Sometimes the tendency to blush is inherited, one striking instance of which is referred to by Darwin¹ in the

¹ Expression of the Emotions in Man and Animals. London, 1872.

case of a family, consisting of father, mother, and ten children, all of whom were prone to blush to a most painful degree. Dieffenbach mentions the case of a lady in whom, during exposure for surgical examination, the blush extended over the nates.

The predisposing causes of flushing are sex, age, menstruation and its irregularities, pregnancy, climacteric, general debility, and the like, while exciting causes are found in emotion, heat, and various functional and organic diseases. The regions affected are chiefly the face, especially the cheeks, and the neck, the manifestation varying much as to symmetry and other symptoms. Unilateral flushing is rare, whether due to hysteria or to other causes. The condition is met with in all degrees, and not infrequently passes over from the domain of physiology to that of pathology, as literature abundantly testifies. The general symptoms of the nerve-storm are numerous, consisting of faintness, weakness, suffocation, nausea, palpitation, giddiness, numbness, pain, and the like, some being sensory, while others are motor and psychical. The pathology of flushing is not so simple as might be thought upon casual examination of the subject. It is probable that the highest nerve-centres are implicated, as in the case of the epileptic or hysterical auræ. The phenomena cannot be explained by the vaso-motor system alone. Instances of inordinate blushing and flushing are occasionally met with in which the subjects, sometimes men, are compelled to abandon the various positions in life to which they naturally belong. The subject has been investigated by Harry Campbell, to whose interesting work¹ the reader is referred for additional information.

PASSIVE HYPERÆMIAS.

The passive hyperæmias are characterized by einnabar-red, dark red, purplish, bluish, or grayish-blue colors, which disappear under pressure. Two forms occur, one idiopathic, the other symptomatic; both are characterized by more or less bluish tints or **BLUENESS OF THE SKIN** (**LIVOR CUTIS, LIVEDO**).

Sometimes **IDIOPATHIC PASSIVE HYPERÆMIAS** are due to external causes. They comprise **LIVEDO** and the various so-called **LIVIDITIES OF THE SKIN**, in which the color is dark or dusky red, bluish-red, purplish, or blackish-blue. Mechanical causes, in the form of contusions, other injuries and wounds, and continued pressure upon the skin (**LIVEDO TRAUMATICA**), and direct obstruction to the circulation, produced by bandages, ligatures, and articles of dress, causing more or less stasis, may be referred to as frequent sources of this variety of hyperæmia. Chemical substances, as well as heat and cold, may also act as causes (**LIVEDO A VENENATIS, LIVEDO CALORICA**).

SYMPTOMATIC PASSIVE HYPERÆMIA occurs in those cases in which there is some imperfection of the heart, of the general circulation, or

¹ Flushing and Morbid Blushing, their Pathology and Treatment. London, 1890.

of the respiration. It manifests itself by a more or less general bluish or purplish discoloration of the skin, as seen, for example, in CYANOSIS, the MORBUS CÆRULEUS of older writers.

ON THE PASSIVE HYPERÆMIAS IN GENERAL.

The passive hyperæmias, owing to some hindrance to the flow of blood or to want of tone in the walls of the vessels, are characterized by a retardation in the flow, with darker-colored lesions than in the active congestions, and in some cases with depression of the temperature. The latter forms indicate a lowered state of the circulation, of the nervous system, and of nutrition. All the functions of the part are depressed. The causes of the two forms of hyperæmia may be similar or alike in some cases, the exhibition of one or the other variety depending upon the general state of nutrition and other circumstances. Under favorable circumstances venous-lymphatic stasis may act as an inflammatory irritant. Passive hyperæmia due to the accumulation of blood in dependent parts of the body, such as may unavoidably occur in certain cases of long-continued illness confining the patient to one position, may show itself in the form of dark reddish or purplish spots (HYPOSTASES), which in turn in certain localities may result in bed-sore. The results due to the artificial production of livedo upon a limb by mechanical means, as by a ligature, in health and in disease, have been studied by Auspitz.¹ They are variable, depending upon the extent to which the experiments are carried, and other circumstances. This observer in investigating the discolorations which take place was able to reproduce the various deeper shades from the cinnabar-red to the brownish, grayish-blue, bluish, and purplish colors. The darker hues are due to the escape of the coloring matter of the blood along with the expressed serum.²

The causes at work are complex in some lividities, but the relaxation of the nerve-tone of the vessels, producing paresis and local asphyxia in some instances, must not be lost sight of. In chronic cases of passive hyperæmia various complications may arise, which may lead to such diseases as Raynaud's symmetrical gangrene and various other tropho-neuroses. For further information on the passive hyperæmias the chapter on the general pathology of the skin may be consulted.

The so-called STASIS-DERMATOSES comprise an ill-defined group of diseases in which hyperæmia is often the first symptom, the venous and lymphatic systems being more or less implicated. In addition to the arterial and venous stasis, œdema, inflammation, ecchymosis, and gangrene may all follow various forms of passive congestion. In some, especially in the beginning, no inflammatory changes take place, the secondary changes being of the nature of nervous or nutritive disturbances

¹ "On Venous Engorgement," Viertelj. für Derm. und Syph., 1874.

² The subject of hyperæmia has been carefully considered also by Ernst Schwimmer, of Buda-Pesth, Ziemssen's Hand-Book of Skin Diseases, p. 147. New York, 1885.

of the skin and subcutaneous tissue. Some of these terminate in hypertrophy (elephantiasis), others in hypertrophy followed by atrophy (scleroderma), accompanied in some cases sooner or later by inflammation of the veins (phlebitis) and lymphatics (lymphangitis).

Peculiar forms of acquired passive hyperæmia are occasionally brought to notice, as in the case of a child under Barlow's observation in the Children's Hospital in London, in whom, when the lower extremities were exposed, purplish rings about an inch in diameter, with clear centres, appeared slowly on the thighs. Another case, in a man affected with locomotor ataxia, was shown by Lees at the London Dermatological Society, in which a similar manifestation developed on the legs when the limbs were uncovered, the rings disappearing when the limbs got warm again.¹ Cavafy² also records two cases of "symmetrical congestive mottling of the skin," both girls, in whom there was a similar but persistent condition, varying much in degree; it was very faint in warm weather, but was aggravated by cold. It disappeared on pressure, leaving slight pigmentation. Both upper and lower extremities were affected, and one girl had been the subject of rheumatic fever and complained of "dead fingers."

The treatment of the various passive hyperæmias is to be conducted upon general principles, with the employment of such agencies as hot and cold baths and douches, electricity, massage, and bandages, together with suitable internal remedies in the proper cases, having an action upon the heart, the nervous centres, and the vaso-motor system in particular.

ERYTHEMA.

OBSERVATIONS ON ERYTHEMA IN GENERAL.

Most of the hyperæmic affections are designated by the general term ERYTHEMA, which has long been in use to express vaguely a condition of the skin characterized either by hyperæmia or by superficial inflammation. Not all erythemata, therefore, belong to the group of hyperæmic affections. Erythema has been employed to express so many phases of hyperæmic and inflammatory disease that without a qualifying or descriptive adjective it stands for little beyond REDNESS OF THE SKIN. The term employed alone is a useful one only in that it gives a general idea of the clinical appearances. In many instances it conveys no idea of the disease present, of its etiology, or of the pathological process which has produced it. It occurs in one form or another in a multitude of diseases. In the majority of instances it is a symptomatic affection. It is frequently merely a stage, often transitory, in some definite process other than erythematous throughout its course. Some of the varieties may be referred to here, others elsewhere, under hyperæmic and exudative erythema.

¹ Quoted by Crocker, *Diseases of the Skin*, 2d edition, Philadelphia, 1893, p. 90.

² *Clin. Soc. Trans.*, vol. xvi. (1883) p. 43, with colored plates.

ERYTHEMA FUGAX is a transitory, fugitive variety, lasting a few minutes or it may be hours. It tends to show itself in irregular form, and to appear successively. It may be due to irritation in the alimentary canal, especially in infants and children, and to diseases in which the nervous system is implicated. It occurs as a result of many pathological conditions. The term ERYTHEMA PARATRIMMA (derived from *παράτριβω*, to rub against) designates the erythematous condition that has been produced by rubbing and friction, as from a tight shoe, walking, horseback-riding, ill-fitting garments, or bedclothes. It differs from erythema intertrigo in that opposing surfaces of skin are not necessary for its production, and in that mucoid secretion is absent. The passive hyperæmic condition preceding a bed-sore, due to pressure upon bony prominences, stasis, want of movement, and a lowered state of the general vitality, also comes under this head. ERYTHEMA LÆVE is employed to designate the condition in which œdema and dropsy precede and induce the hyperæmia. Impaired circulation and a lowered vitality of the part usually exist. The skin is smooth (hence the term læve), red, tense, and shining. It is met with chiefly on the legs. Where the œdema is marked, the term ERYTHEMA ŒDEMATOSUM is employed. In such cases exudation rather than hyperæmia is usually present. It is really an œdema of the integument.

LOCALIZATION AND SYMMETRY OF ERYTHEMA.

Concerning the localization of the erythemata, they exhibit a marked tendency to occur upon the face, especially the cheeks, neck, trunk, and upper extremities. The back of the neck is well supplied with a superficial plexus of blood-vessels, and is frequently the seat of both fugitive and persistent hyperæmia (ERYTHEMA NUCHÆ), especially in infants, altogether independent of pressure. In infants in good general health it may continue during the first year of life or even later. C. W. Allen¹ has called particular attention to the affection, as well as to its frequent occurrence in this region in syphilitic subjects, especially in the early stage. The hyperæmia is more or less sharply defined, and extends from the margin of the hair at the back of the neck upward into the scalp an inch or two, usually existing in the form of a square, a parallelogram, or a triangle. The same hyperæmic condition of the back of the neck has been noted in other diseases, as scarlatina and measles.

The erythemata, whether hyperæmic or exudative, are in a great majority of cases symmetrical; but sometimes this is not the case, while occasionally instances are encountered in which the manifestation is confined to one side of the body. As illustrative of the latter observation a case of so-called HEMI-ERYTHEMA reported by B. W. Richardson,² seen also by Robert Willis, may be cited. The whole right side of the body was affected with a deep scarlet erythematous blush, with a sharply

¹ Trans. Amer. Derm. Assoc., 1891, New York.

² Asclepiad, 1885, p. 191.

defined median line in the fore and back part of the body. After a few days there was profuse perspiration over the whole of this surface, attended with extreme exhaustion. The patient suddenly sank and died from the separation of a large clot of fibrin in the right ventricle of the heart.

The simpler varieties of the erythemata, punctate, macular, or diffuse in form, are particularly common in infants and children, occurring often reflexly or as a symptom of some central nerve disturbance or irritation. The baneful influence of repeated flushing, especially on the cheeks and nose, giving rise to FLUSH PATCHES, is well known, and may eventually lead to rosacea, acne rosacea, lupus erythematosus, and other diseases. Flushings when under control are physiological, but they may become excessive, constituting forms of erythema, and are then to be classed as pathological. Hyperæmia, or erythema, due to psychical causes or influences are illustrated by ERYTHEMA PUDORIS and ERYTHEMA IRACUNDIÆ, and the like. The result here of the mental impression is the production through the higher nervous centres of a rapid dilatation of the blood-vessels, causing a congestion of the cutaneous capillaries, followed by almost equally rapid contraction and restoration to the normal.

ERYTHEMA HYPERÆMICUM.

ERYTHEMA HYPERÆMICUM IS A CONGESTIVE DISORDER, CHARACTERIZED BY REDNESS VARIABLE AS TO SHADE, OCCURRING IN THE FORM OF VARIOUSLY SIZED, DIFFUSED OR CIRCUMSCRIBED, NON-ELEVATED SPOTS OR PATCHES.

Symptoms.—It consists in a more or less congested state of the skin, marked by the symptoms which have been already enumerated as belonging to the hyperæmias. It is also known as ERYTHEMA SIMPLEX, and as ERYTHEMA CONGESTIVUM, in contradistinction to erythema exsudativum, or inflammatory erythema. The causes which give rise to it are numerous, and are diverse in their nature; they comprise heat, cold, injuries, poisons, irritating substances of all kinds, certain systemic diseases, disorders of internal organs, disturbances of the alimentary canal, etc. It may be idiopathic or symptomatic. These varieties are to be considered separately, both being of importance.

IDIOPATHIC ERYTHEMA.

ERYTHEMA FROM CALORIC.—Under this head are included the erythemata occasioned by heat (ERYTHEMA AB IGNE) and cold (PERNIO). Both of these agencies, at certain temperatures, bring about hyperæmia, or congestion, of the skin, but carried beyond this point they provoke more or less exudation from the vessels. Artificial heat, and especially the rays of the sun, producing ERYTHEMA SOLARE, are among the well-known and commoner causes of this form of erythema.

ERYTHEMA FROM TRAUMATISM.—Erythema may also be occasioned by traumatism, wounds, and injuries, and by irritation from continued

pressure and rubbing. Thus, it is observed as the result of tightly fitting garments, garters, bandages, and trusses.

ERYTHEMA FROM POISONS.—Poisons of all kinds play an important part in the production of erythema (*ERYTHEMA AB ACRIBUS seu VENE-NATUM*). Many substances, both mineral and vegetable, act injuriously upon the skin. A few of these, as mustard, sulphur, arnica, rhus, cantharides, various dye-stuffs, acids, strong soaps, and alkalis, may be mentioned as not infrequently giving rise to congestive cutaneous disturbance.

The several varieties of simple erythema enumerated are referred to more fully elsewhere, in the consideration of the inflammations of the skin produced by the causes mentioned.

SYMPTOMATIC ERYTHEMA.

Here may be placed all those congestive erythemas, or “rashes,” which occur in the course of certain systemic diseases or as the result of some general derangement of the economy. They may occur upon any portion of the body, but commonly appear upon the face, neck, and trunk. A knowledge of these erythemas is extremely necessary, for they frequently simulate other more serious affections. Simple erythemas due to disorders of the internal organs, as the stomach and bowels, are of very frequent occurrence in infants and young children. They may assume various markings and patterns, as spots or patches, rings or circles, segments of circles, marginate, creeping, gyrate, mapped, marbled, and mottled forms, and may be either slight or well defined in their expression. Sometimes instead of being fugitive or ephemeral they are persistent, in other cases they incline to relapse from time to time. Certain general diseases are at times accompanied with hyperæmia of the skin which shows itself in the form of roundish spots, the size of a pea or a finger-nail, to which the term *ROSEOLA* has been given. It denotes simply the peculiar *form* of the erythema, and in no degree indicates the nature of the disease which has brought it forth. Thus, roseola is at times employed to express one of the first lesions of syphilis upon the skin, and also the erythema which is sometimes observed in connection with vaccinia and with variola.

Erythema, fugitive or persistent in character, is met with at times associated with or complicating well-known diseases, being symptomatic and due to disturbed circulation from impaired functional activity or from obstruction, or to central or peripheral nerve influence. Thus, it is sometimes noted with *ASTHMA*, *RHEUMATISM*, and *GOUT*. In the latter affection it is usually evanescent, occurring especially about the face, in the form of flushing. Dilatation of the blood-vessels with erythema on a moist condition of the skin is also at times met with in *HEMIPLEGIA*, *CHOREA*, *EPILEPSY*, and *EXOPHTHALMIC GOITRE*.

Erythema sometimes follows the internal administration of *DRUGS*. The list is a long one, including such remedies as antifebrin, acetanilid,

antipyrin, phenacetin, arsenic, belladonna, quinine, chloral, salicylic acid, and sulphonal. The hyperæmic or inflammatory condition, as the case may be, exists in all degrees, and is especially interesting from the stand-points of etiology and differential diagnosis.¹

Erythema also occurs as the result of poisoning by BACTERIA, the condition being one bordering upon or manifesting exudation. Many cases of this kind are distinctly inflammatory, and show varied lesions. The TOXIC ERYTHEMATA may be referred to here, although many of them are described more at length in the chapter devoted to dermatitis medicamentosa, or the so-called medicinal eruptions. Others are referred to in connection with the special diseases in which they occur, as, for example, the eruptive fevers, syphilis, pellagra, and the like. They are notably atypical in their clinical manifestations, as well as in their localization and course.

Diagnosis.—From what has been said it is manifest that the boundary line between simple erythema and dermatitis—true inflammation of the skin—is frequently ill defined. As stated in considering the subject of hyperæmia in the chapter on the general pathology of the skin, it is sometimes difficult to determine exactly when exudation commences; clinically, however, the symptoms in affections attended with exudation are generally such as not to permit of much doubt concerning the pathological change.

Treatment.—This must obviously depend upon the variety of the erythema, with special reference to the nature and the cause. The idiopathic erythemata require but little beyond the removal of the cause, which in most instances is sufficiently patent. In cases of persistent symptomatic erythema, such as are of common occurrence in infants, the internal disorder to which the cutaneous manifestation is due must be sought for. Local applications, where they are demanded, may be employed as the case may require, and for this purpose the various bland dusting powders, soothing pastes and ointments, and lotions, mentioned in connection with erythema intertrigo, erythema exudativum multiforme, and erythematous eczema, may be used.

ERYTHEMA INTERTRIGO.

ERYTHEMA INTERTRIGO IS A HYPERÆMIC OR EXUDATIVE AFFECTION, CHARACTERIZED BY REDNESS, HEAT, AND A MORE OR LESS ABRADED OR MACERATED STATE OF THE EPIDERMIS, WITH MUCOID SECRETION, OCCURRING ON OPPOSING SURFACES.

Symptoms.—This affection (often designated INTERTRIGO) occurs in those parts where the natural folds of the skin come in contact with one another, as about the nates, perineum, labia, scrotum, groins, axillæ, and beneath the mammæ, and is produced by the heat and friction of two

¹ See for an account of these manifestations the chapter on Dermatitis Medicamentosa.

opposing surfaces. It is especially common in fat persons, and in infants whose skin is tender. The skin soon becomes chafed, and feels hot and itchy and sore or painful. Sweating also takes place, which acting upon the epidermis furthers maceration and gives rise to an offensive, acrid, mucoid fluid. If the process be not arrested at this stage, other inflammatory symptoms may appear. The affection usually makes its advent suddenly, and, unless checked by the removal of the cause and by treatment, may soon become annoying; in the average case if properly managed in the first stage, like prickly heat, it ordinarily passes away almost as rapidly as it came. It may last but a few days, or, on the other hand, it may continue for weeks or months. It may be complicated with dermic abscesses originating in the sweat glands, and in aggravated cases not infrequently it passes into eczema. Occurring between the nates, its commonest seat, it is often troublesome, interfering with walking or sitting. It is apt to be more or less persistent in infants, especially in those who perspire freely, and may be complicated with eczema, giving rise to ECZEMATOUS INTERTRIGO, and also with seborrhœa. It is liable to relapse, especially if the early symptoms be neglected.

Etiology.—It is for the most part an affection of hot weather, although it may also occur in cool or even cold weather if the conditions be favorable: thus, in infants it is seen at all seasons of the year. It may be idiopathic or symptomatic in its origin. Unusual exercise, sedentary habits, sitting for a long time on cushioned seats, excessive underclothing, and other conditions which occasion more than usual warmth of the body and tend to produce sweating, all favor its development. The cause is generally to be found in an undue amount of heat about the parts affected, arising either from friction or from permitting the opposing surfaces exposed to warmth to remain too long in contact with each other. Irritating discharges from the vagina, as in leucorrhœa; urine; feces; and diarrhœic stools, may all be productive of the affection. Glycosuric diabetes may also give rise to it. Hardy¹ directs special attention to this form, which is met with especially about the exterior genital region of women affected with diabetes. It is accompanied with marked itching. Its presence may lead to the recognition of the diabetes, which may not be suspected by the patient.

In children, and in those whose skin is delicate, neglect of cleanliness, or, on the other hand, too much water and soap, or merely rubbing and chafing, as from a garment, may be sufficient to provoke it, as is often observed in the new-born. In infants, as in the case of symptomatic simple erythema, the cause may not infrequently be found in stomach or bowel derangements, parasites in the alimentary canal, teething, and various other general and local ailments which dispose to produce erythema.

¹ *Traité pratique et descriptif des Maladies de la Peau.* Paris, 1886

Diagnosis.—The affection is to be diagnosed from eczema and from hereditary syphilis, especially from the latter, which at times, in infants, it simulates closely. In simple, uncomplicated cases it differs from erythematous eczema in many particulars. Thus, removal of the local irritant generally causes it to disappear rapidly, whereas eczema is inclined to persist and even to spread until removed by treatment. A. Fournier¹ has described an “erythema syphilidiforme” about the genital region and thighs in infants between the ages of three and eight months, occurring in those who suffer with diarrhœa. According to this writer, it begins as a papulo-vesicle, resembling closely the vaccine papule. In the second stage the centre becomes depressed, the vesicle ruptures, the surface becomes eroded, and the lesion may resemble a syphilitic moist papule. A second crop of lesions usually appears at the end of a few days, which undergoes the same changes as the first. It is simple, but is liable to be regarded as syphilitic. The diagnosis between simple or complicated non-specific erythema and syphilitic erythema should never be hastily made in doubtful cases. An error in diagnosis where syphilis is concerned is always most unfortunate and deplorable. It is best to await the natural evolution of the lesions, when the nature of the disease will become evident.

Treatment.—Frequently little is required beyond ordinary care. The parts should be cleansed with cold water and a neutral or superfatted soap, or with bran-water, and dried with a soft towel. The folds of the skin should be separated and kept apart with lint or with a piece of linen cloth, or with flat bags, as suggested by Unna, made of mull or cheese-cloth, containing some soothing antiseptic powder, as salicylic acid, ten grains to the ounce. Dusting powders constitute the most generally useful remedies, prepared with starch, chalk, oxide of zinc, talc, boric acid, and similar substances, made into impalpable powders, in varying proportions, as, for example, in the following :

R Pulv. Acidi Borici, ʒiiss;
 Pulv. Oxidi Zinci, ʒiiss;
 Pulv. Amyli, ʒv.
 M.—Sig. Dusting powder.

A saturated solution of boric acid is a safe remedy frequently of service. Dilute alcoholic lotions may also be employed. Astringent lotions, composed of subacetate of lead, sulphate of zinc, or acetate of zinc, a few grains to the ounce, will also prove serviceable. Solution of subacetate of lead ten minims, glycerin ten minims, and water one ounce, is of value. Acetate of zinc, three grains to the ounce of water, to which seven minims of glycerin are added, is serviceable. A lotion of lactate of lead, made extemporaneously with solution of subacetate of lead, half a drachm to one ounce of milk, is recommended by Crocker.

¹ Rev. gén. de Clin. et de Thérap., No. 8, 1892.

A weak solution of corrosive sublimate, about one-quarter of a grain to the ounce, will be found useful in some cases, likewise a lotion of hyposulphite of sodium, ten or twenty grains to the ounce. Tincture of iodine, freely diluted with water, is of value. When weak astringent or bland lotions are employed they may often be applied advantageously with compresses, left on for a half-hour or longer, several times a day. In cases which prove obstinate I am in the habit of using diluted *lotio nigra* as an application, followed by the use of some bland powder or paste. The various remedies, especially lotions, mentioned in considering the treatment of acute erythematous eczema may likewise be resorted to in obstinate cases. Ointments and greasy or oily applications, as a rule, are to be avoided, but soft, drying pastes sometimes act kindly. In the treatment a distinction should be made between simple and complicated forms of the disease, and the possible invasion of the skin by bacteria and fungi should be borne in mind.

CLASS III.

EXSUDATIONES.—INFLAMMATIONS.

DEFINITION OF DERMATITIS, AND THE USE OF THE TERM.

We should endeavor to draw the line as sharply as possible, clinically and pathologically, between hyperæmic and inflammatory affections: in the first there is no or only insignificant exudation from the vessels; in the second this change occurs in more or less pronounced form, and gives rise to varied appreciable lesions in the skin. That the two processes are most intimately connected, and that they are frequently difficult to distinguish, is obvious.

The subject of inflammation as it attacks the skin, and the numerous and varied lesions which it is capable of producing, have been already discussed in the chapters on general symptomatology and pathology. Dermatitis, as manifested in its simpler forms, consists of an inflammation of the skin characterized by the ordinary symptoms of this process, including redness, heat, swelling, itching or pain, and exudation from the vessels. The latter is the most constant and important feature. In terminating it gives rise to one or another of the various lesions and their modifications common to the diseases of the skin. The inflammation may be superficial, involving only the papillary layer or the whole corium, or may be deep-seated, invading the subcutaneous tissue as well as the skin, as in dermatitis phlegmonosa. The true dermatides are characterized by positive inflammation of the skin ("essential dermatitis"), and have a similar pathological anatomy, although they possess diverse clinical forms, depending upon the cause of the inflammation, the degree of the process, and other factors. Their causes are, as is well known, extremely varied; some are simple, while others are peculiar, specific, or complex. Some morbid states are referred to under the name of "Dermatitis," to which descriptive adjectives are added, characteristic of some striking pathological, etiological, or clinical feature, as in the case of dermatitis traumatica and dermatitis venenata. There are other instances in which this term for convenience is employed to designate forms of inflammation of the skin whose nature is not understood, the name conveying the idea that the process, whatever may be its cause or pathology, is inflammatory and peculiar in the manner indicated by the adjective, as, for example, dermatitis exfoliativa and dermatitis herpetiformis. The term dermatitis always carries with it the idea of inflammation of a positive degree.

CLASSIFICATION OF THE INFLAMMATORY DISEASES.

Some of the inflammations of the skin are distinctly IDIOPATHIC, others are SYMPTOMATIC. The former include mechanical or traumatic inflammation, DERMATITIS TRAUMATICA, DERMATITIS CALORICA (from heat and cold), DERMATITIS VENENATA, resulting from poisons, and DERMATITIS NEUROPATHICA, resulting from disturbances of innervation, direct or indirect. The symptomatic inflammations comprise a much more extensive and complex group, in which are placed numerous well-known diseases, and others less clearly defined, due to varied causes. In addition to the manifestly idiopathic and symptomatic affections, there are numerous other both common and clinically well-understood diseases, such as eczema, which cannot, because of lack of definite knowledge concerning them, or for other reasons, be grouped in all instances under either of these heads.

Owing to the great variety of the clinical forms of inflammation, and to the fact that the nature of some diseases is tolerably well understood and that concerning others there is much doubt, the classification of these diseases is embarrassing. It is more or less arbitrary, and is based on varied grounds. Thus, clinical features, anatomy, pathology, etiology, or a combination of facts and circumstances are in some instances sufficient to place the disease here or there in the group, according to the views held. Under these circumstances it is impossible to arrange the various inflammatory diseases in a consistent or satisfactory manner. At the same time, a general grouping, distinctly useful for practical purposes and study, can be made.

The exudations, or inflammations, constitute by far the largest and most important group of the diseases of the skin. Their number is legion, and new clinical forms are constantly being added to the list. They include all those affections which are characterized by inflammation, in contradistinction to the so-called inflammatory new growths. The lines between inflammations and new growths in many instances are faint and vague. Thus, some diseases which by common consent are placed with the new growths might more appropriately be considered as inflammations, as, for example, lupus erythematosus.

In this class is to be found that great group, the exudative erythematata, the eruptive fevers, urticaria, eczema, psoriasis, and a number of other common diseases with which the general practitioner finds himself in almost daily contact. The various affections are exceedingly diverse as regards their external form and character, some manifesting themselves as erythema, and in a multitude of forms; others as papules, papulo-vesicles, vesicles, papulo-pustules, pustules, and blebs, together with their secondary products, scales and crusts; while yet others appear as diffused, more or less deep-seated inflammations, involving not only the skin but also the subcutaneous connective tissue. The various com-

binations of lesions which may occur in many diseases affecting the skin are, it may be said, unlimited. New phases of cutaneous disease are constantly appearing and being described by dermatologists in all parts of the world. The subject grows, and it would seem to be under the influence of the process of evolution in general.

The inflammatory diseases vary extremely as to their course; some are acute, and terminate in spontaneous recovery; while others, the majority, incline to become chronic and to continue indefinitely. The skin is particularly prone to take on chronic forms of disease. Some are simple and benign in their nature; others are most distressing to the patient and at times are disastrous and fatal in their consequences. Their causes are manifold, and in many cases they are singularly different. In innumerable instances they represent pathological processes which involve the whole economy, the cutaneous lesions, or the so-called "diseases of the skin," being the most prominent. In many cases they are the only manifestation of disease, the process confining itself to the integument. In others they represent idiopathic disease of the skin.

ERYTHEMA EXSUDATIVUM.

OBSERVATIONS ON THE EXUDATIVE ERYTHEMATA IN GENERAL.

Under this heading may be grouped a number of affections similar though more or less diverse in character, but all possessing features of erythematous inflammation. The group is made in contradistinction to that of the simple congestive, or hyperæmic, erythemata, already considered, in which the prevailing process is that of hyperæmia unaccompanied by exudation. In the several forms of disease to be described now, distinct inflammation of an erythematous type, characterized by multiformity of the lesions and a varied symptomatology and etiology, is the prevailing clinical feature. This varies to such an extent in some cases as to give rise to symptoms, local and general, so diverse and peculiar as to warrant distinctive titles to the manifestations. They are characterized for the most part by polymorphism. The type of these erythemata is found in erythema exsudativum multiforme, as this affection was first clearly defined by Hebra and figured in his Atlas of Skin Diseases. Confusion has existed of late on the question of several of these forms of inflammatory erythema, especially as to whether they should be regarded as merely varieties of erythema multiforme or should be looked upon as distinct diseases. This has been brought about by the vast number of peculiar and anomalous cases that have been recorded, and the fact that the same lesions may be produced by a variety of causes. Under these circumstances it is advisable to adopt the well-known and common form of erythema called ERYTHEMA EXSUDATIVUM MULTIFORME as a type, or standard, from which other forms of similar inflammation may deviate. These may be viewed as varieties of that

affection, as distinct diseases, or as mixed or complicated affections. It need scarcely be said that there occur many exudative erythemata which cannot be classed under *erythema exsudativum multiforme*. It would seem, too, from the clinical observations of the author, as well as from the numerous recorded cases in literature, that due allowance must be made for the fusion both of diverse lesions and of processes. Hyperæmia and inflammation being such common modes of expression in the skin, due to innumerable internal and external irritants, varied in nature and kind, it will be readily comprehended that a multitude of similar or allied cutaneous manifestations may make their appearance.

CLASSIFICATION OF THE EXUDATIVE ERYTHEMATA.

Polotebnoff, of Russia, who has made an exhaustive study of the erythemata, regards them as forms of a single disease,—exudative erythema. All of them, except those of central origin and those which arise reflexly, he believes, are preceded by general symptoms which entirely or in great part disappear with the appearance of the eruption. Etiologically and clinically, acute pemphigus and the infectious erythemata, according to this writer, are merely different symptoms of the same disease. He admits the following forms of erythema.

1. Erythemata produced by external irritants, the erythema being limited to the region irritated (erythemas of Sauvages and of Plenck).

2. Reflex erythemata, which develop (*a*) after external local irritation of the skin, and do not remain limited to the region irritated, but spread over extended surfaces; (*b*) after irritation of internal organs, as of the uterus, and of the bladder, from stone or other irritant.

3. Central erythemata, coming on after an irritation of the nerve-centres (as the erythema of tubercular meningitis). Probably medicinal erythemata, as well as erythemata noted in renal disease, may be classed here.

4. Infectious erythemata, which are found in all infectious diseases.¹

H. Leloir, of France, who has given special study to the subject, divides the polymorphous erythemata into the following three classes:

1. Those due to extrinsic causes, produced by toxic, mineral, vegetable, animal, medicinal, and alimentary agents.

2. Those due to internal causes, symptomatic of certain diathetic or general diseases, such as gout and rheumatism, and of certain pathological states, as glycosuric diabetes, uræmia, albuminuria, cholemia, diseases in which there is a production of toxins of different kinds.

3. The infectious erythemata, which may be divided into those which

¹ The subject of the exudative erythemata in general has been carefully studied by Polotebnoff (*Monatshefte für prak. Derm.*, 1887, Supplement II., an abstract of which may be found in *Jour. of Cut. and Gen.-Urin. Dis.*, 1888, p. 181), H. Leloir (*Traité descriptif des Maladies de la Peau*, 4me livraison, Paris, 1893), E. Schwimmer (*Ziems-sen's Hand-Book of Skin Diseases*, New York, 1885), and Besnier (*Annales de Dermatologie et de Syphiligraphie*, 1890).



ERYTHEMA.

ACUTE, SIMPLE EXUDATIVE VARIETY.

It exists on the trunk, thighs, and legs of a young man in the form of a number of large, rounded or ovoidal, superficial, erythematous, macular lesions. Duration a few days, disappearing without treatment. Cause and nature unknown. Such cases possess certain symptoms in common with erythema multiforme, but lack the characteristic features of that disease, and hence may be properly classed as simple exudative erythema. (Dr. GEORGE HENRY FOX's case.)

are secondary, symptomatic of divers well-known infectious morbid states, and those which are grave and of a nature unknown, termed primitive infectious erythemata.

The first group contains those manifestations which have been etio-logically and conveniently arranged under the caption of MEDICINAL ERUPTIONS, or DERMATITIS MEDICAMENTOSA, where they are considered more at length. Those produced by general states of the economy, such as gout and rheumatism, require no special consideration here. They are, as a rule, in no way peculiar. The INFECTIOUS ERYTHEMATA constitute a large and varied group, symptomatic of recognized infectious states of the system. These forms of erythema are common, in one variety or another, in most of the diseases characterized by severe pyrexia (ERYTHEMA FEBRILE), occurring either in the beginning or in the decline of the attack. They are distinctly polymorphous, taking on simple erythematous, measly, scarlatinoid, or other forms of eruption suggestive of or allied to well-known idiopathic cutaneous diseases. Thus, they are noted in VARIOLA (ERYTHEMA VARIOLOSUM) VACCINIA (ERYTHEMA VACCINICUM), SCARLATINA, MEASLES, TYPHOID FEVER, INFLUENZA, SYPHILIS, TUBERCULOSIS, GRANULOMA FUNGOIDES, LEPRO, CHOLERA, and especially, as to frequency, in SEPTICÆMIA. As another instance of erythema due to infection may be mentioned GONORRHOËAL or BLENNORRHAGIC ERYTHEMA, whose manifestations are variable in their aspect, the most common forms being polymorphous, urticarial, scarlatiniform, morbilliform, and purpuric. The eruption often resembles that due to the ingestion of copaiba, for which it is liable to be mistaken, especially where this drug has been employed. They are to be viewed as the result probably of toxins produced by the bacilli. This would seem to be true at least of some diseases, as tuberculosis.

ERYTHEMA DIPHTHERITICUM, ERYTHEMA CHOLERAICUM.

In some cases of diphtheria a polymorphous erythematous eruption, ERYTHEMA DIPHTHERITICUM, manifests itself either in the early or in the later stages of the disease. Sometimes as late as the second or third day, according to A. R. Robinson,¹ in both mild and severe cases, a diffuse erythematous, or a mottled, or a punctate, scarlatiniform rash may appear, lasting from one to two days and disappearing with or without desquamation. It usually occurs on the thorax or the abdomen, but at times on the extremities, and is of variable extension. Later, when the system is more or less profoundly affected with the infection, another kind of eruption may make its appearance, especially in connection with nasal diphtheria, in the form generally of lesions like ordinary maculo-papular erythema multiforme. In other cases it is morbilliform or like a hemorrhagic papular erythema multiforme. It mani-

¹ Manual of Dermatology, New York, 1884, p. 189. Also, Jour. Cut. and Gen.-Urin. Dis., April, 1883. (With colored portrait)

feats itself especially on the extremities, and is usually limited in extent, though it may be general. It is unaccompanied by itching or burning, disappears without desquamation, and may leave slight pigmentation.

The erythematous eruption seen in cholera (*ERYTHEMA CHOLERAICUM*, sometimes referred to as *ROSEOLA CHOLERAICA*) is a polymorphous erythema, usually of a macular, maculo-papular, or papular form, occupying the backs of the hands and feet, forearms, and legs, the trunk, and the face. It may appear at the onset or towards the end of the disease, and lasts several days, terminating usually in fine desquamation. It has much the character of an ordinary erythema multiforme maculo-papulosum.

URÆMIA, BRIGHT'S DISEASE.

Multiform erythematous lesions are occasionally noted as a symptom of BRIGHT'S DISEASE and of URÆMIA, cases of which have been recorded by Le Cronier Lancaster¹ and by Pye-Smith.² In uræmia the lesions are erythematous and erythemato-papular, and are met with usually in subjects affected with chronic interstitial nephritis. The cutaneous manifestation occurs in connection with other symptoms of chronic uræmia, especially drowsiness, vomiting, and diarrhœa, and is of very grave significance. The eruption has been studied by Lancaster, who gives the notes of eight cases, and to whom the author is indebted. At first the lesions are maculæ of a bright red color, appearing usually upon the extensor surfaces of the hands, forearms, and legs, in this respect resembling typical erythema multiforme. Within a few hours to a day or two the macules become papules, and new lesions appear over various parts of the body, including the palms of the hands and the soles of the feet, and especially the face. The papules soon tend to become confluent over large areas. In the course of three or four days they may subside, with free, flaky desquamation, leaving the skin thickened and dull red in color; or an eczematous condition may develop, with the exudation of a gummy fluid, followed by crusts. Occasionally discrete pustules form, and not infrequently the papules show signs of hemorrhage. Itching, usually moderate, but sometimes excessive, attends the eruption.

In Bright's disease, according to Pye-Smith,³ the cutaneous manifestation may take the form of a bright red diffused erythema, appearing chiefly on the trunk, less often on the neck, arms, or thighs, and very seldom on the face, hands, or feet. As a rule, it neither itches nor smarts, and lasts but a few days. In other cases the eruption is papular, the lesions being large, discrete, and dark red in color, seated on a dry, rough, and sometimes scaly surface. It affects most frequently the outer side of the thighs and legs, the shoulders, and the extensor surface of the forearm, but may appear on the abdomen and loins. It will be noted that the

¹ Trans. Clin. Soc. London, vol. xxv. (1892). See remarks by the author on the "kidneys and urine" in the chapter on Etiology.

² Brit. Jour. of Derm., Sept. 1895.

³ Brit. Jour. of Derm., Sept. 1895.

eruption (as well as that in nræmia) differs in important particulars from that of typical erythema multiforme.

Febrile erythema occasionally precedes JAUNDICE, as in a case reported by Muselier,¹ in which the face, neck, chest, and abdomen were affected, the eruption resembling erythema multiforme. Féréol records a similar fatal case with rheumatism and cardiac disease.

These varied observations show that, while the disease may be confined in its manifestation to the skin, it may also prove to be a general disease, of which the cutaneous lesions constitute only one series of a set of symptoms affecting the economy. This is very often the case. The relation of the skin and its diseases to the general organism is nowhere in medicine set forth more plainly than in the case of the erythemata, both hyperæmic and exudative, which not infrequently are merely symptomatic manifestations.

ERYTHEMA SCARLATINOIDES.

This affection was originally designated by Hardy² "erythema scarlatiniforme," and by Bazin "roseola scarlatiniforme." It has more recently received careful study from Besnier, who considers the term scarlatinoides as being the most applicable. As the several names indicate, it bears a resemblance, as concerns the cutaneous manifestation, to scarlatina, from which disease especially it must be distinguished. It comes on in most cases with slight constitutional disturbance and elevation of temperature, but these and other general symptoms are variable. The rash, which may appear suddenly or gradually, invading especially the trunk and the extremities, is characterized by a bright-red or crimson punctiform or diffuse erythema, accompanied sometimes by slight burning and itching. It may appear in the form of a general, diffuse rash or in patches, as on the chest, thighs, neck, and face, though the last-named region often escapes entirely. Its distribution is irregular. It is usually of short duration, and tends to become paler in a few days, not infrequently passing off with little or no desquamation. In other cases, of a severer type, desquamation variable in degree, sometimes considerable, furfuraceous, flaky, shreddy, ragged, or in sheets, may take place. The duration of the affection varies from a few days to a week or longer. In rare cases the rash is more distinctly macular, or roseolar, in character, and is not so vividly red, when it may bear a resemblance to measles (ERYTHEMA RUBELOIDES).

The disease has no specific cause, and is not contagious nor transmissible, in these respects differing from scarlatina and measles. There are no characteristic symptoms of the tongue or of the throat. An attack is no protection against scarlatina. Hardy observes that miliaria,

¹ Universal Annual of the Medical Sciences, 1890.

² Leçons sur les Maladies de la Peau, 2e partie, Paris, 1851, p. 31; and Traité pratique et descriptif des Maladies de la Peau, 1886, Paris, p. 636.

so frequent in scarlatina, does not occur in this affection. The so-called "desquamative scarlatiniform erythema," as described by Brocq and Besnier, to be referred to, is a more inflammatory and severe affection, and belongs rather to the group of dermatitides. There are some cases which seem to be connected with gastric and intestinal disturbance, others which are due to infection, as observed especially in the PUERPERAL state ("puerperal scarlatina"), and SEPTICÆMIA, specially from SURGICAL OPERATIONS ("surgical scarlatina"), and, lastly, some which are produced by DRUGS, notably mercury, employed internally or locally. It is also met with in TYPHOID FEVER. Ohmann-Dumesnil¹ adopts the conclusions formulated by J. W. Moore,² that when it shows itself early at the end of the first week of the fever it probably depends on a reactive inhibition of the vaso-motor system of nerves, and that when it occurs later, in the second or third week, as the sweating stage is approached, it depends on septicæmia, or secondary blood-poisoning. McCall Anderson³ (who designates it "erythema punctatum") expresses the opinion that it is usually dependent upon digestive derangement. There can be no doubt, however, that it may be due to varied and different causes, of which those of an infectious nature, in the author's opinion, are the most frequent.

ERYTHEMA SCARLATINOIDES RECIDIVANS.

Not infrequently the disease assumes a severer type, all the symptoms being more or less aggravated, the degree of desquamation, and especially the tendency to relapse, being among the most conspicuous symptoms, from which circumstance it was named by Féréal⁴ (who was the first to describe it, in 1876), Vidal, Besnier, and Brocq "érythème desquamatif scarlatiniforme récidivant" (DESQUAMATIVE RELAPSING SCARLATINIFORM ERYTHEMA). Some French writers seem to regard it as a different affection from erythema scarlatinoides. Cases have been reported in which the inflammatory and exfoliative symptoms were so marked as to suggest the term "dermatitis scarlatiniformis," by which name this variety is sometimes designated, but in the author's opinion the term erythema is preferable for the disease, confusion with dermatitis exfoliativa and pityriasis rubra being thus avoided. In some cases the affection has much in common with exfoliative dermatitis. The author believes that certain cases of so-called "shedding of the skin," especially cases characterized by periodicity, should be placed here rather than with dermatitis exfoliativa. The inflammation and subsequent desquamation are, as a rule, more superficial than in dermatitis exfoliativa.

¹ Jour. Cut. and Gen.-Urin. Dis., 1890, p. 293 (with bibliography).

² Dublin Jour. Med. Sci., Dec. 1888. See, also, The Eruptive and Continued Fevers, by the same author, New York, 1892, p. 372. T. Whipple (Clin. Soc. Trans., vol. xvi.) has also contributed to the knowledge of this subject.

³ Treatise on Diseases of the Skin, Philadelphia, 1887, p. 105.

⁴ Bull. et Mém. de la Soc. Méd. des Hôp. de Paris, 1876.

Besnier¹ describes its features as follows. It may resemble scarlatina closely, and may be febrile for a part or the whole of its course, when that is short. It may begin with shivering, lassitude, headache, and sore throat, and be complicated with albuminuria. While the rash is at its height the temperature may abate, a point which may help to distinguish it from scarlatina; it also differs from this more serious disease in the variable and prolonged period (from three to six weeks) of the eruption; in the coexistence of efflorescence and desquamation; in its non-contagiousness; in the tendency to relapse, and to occur at certain seasons (spring and autumn), and in its causation. It may be produced by the most varied causes and yet never lose its identity, its characters being much the same whether due to an external or internal toxic agent, such as mercury, or to chill, gonorrhœa, or varied other causes. It does not seem to be due to a definite, specific cause. What will produce it in one person will fail to do so in another, or even in the same person under different circumstances. The effect often persists long after the cause has ceased to exist, and the eruption may in duration and intensity be out of all proportion to the nature, energy, or mode of application of the cause. Not infrequently there exists a notable tendency in the efflorescence to become milder with each attack, as in a case reported by Hartzell.

It occurs occasionally, though less frequently than erythema multiforme, in the course of RHEUMATISM, INFECTIOUS DISEASES, TOXÆMIA, BLENNORRHAGIA, and ALCOHOLISM. Among internal toxic agents mercury holds the first place, then belladonna, opium, arsenic, quinine, chloral, carbolic acid, the iodides, antipyrin, and salicylates. The cause may also be external, as in the case of laborers working in high temperatures, leather-dressers, and the like, or it may be due to some drug, as mercury, especially from mercurial inunctions, which occupies a prominent place in the list.

We are indebted especially to French dermatologists for exploiting this affection. In the United States the subject has been considered specially by I. E. Atkinson,² C. W. Allen,³ Grindon,⁴ G. T. Elliott,⁵ Ohmann-Dumesnil,⁶ and Hartzell.⁷

ERYTHEMA PERSTANS.

Under the caption of ERYTHEMA PERSTANS a number of instances of erythema, varied in symptoms and nature, having the peculiarity

¹ Path. des érythèmes, Annales de Derm. et de Syph., 1890, p. 1; also abstract in Brit. Jour. of Derm., June, 1890.

² Jour. Cut. and Ven. Dis., vol. iv., Oct. 1886.

³ Medical Record, Aug. 3, 1889.

⁴ Jour. Amer. Med. Assoc., April 27, 1889.

⁵ New York Med. Jour., Jan. 11, 1890.

⁶ Jour. Cut. and Gen.-Urin. Dis., Aug. 1890, and St. Louis Med. and Surg. Jour., July, 1893.

⁷ University Medical Magazine, Aug. 1895.

of persistence, have been reported. The majority of them agree in description with the "érythème scarlatiniforme" of French writers, characterized by bright redness and more or less desquamation. These cases, instead of being transient or recurrent, persist through a variable period of weeks, months, or even years, without change of type. They are always symmetrical, according to J. F. Payne,¹ who has especially investigated the subject, and are accompanied with burning and painful sensations, in addition to itching.

This observer is of opinion that nearly all such cases may be treated successfully by drugs, and especially by quinine and sodium salicylate, the former in five grain doses so that twenty or thirty grains shall be taken daily. Ergot, in the opinion of the author, is also useful. Lead lotion, kept on continuously, is probably the most effective local remedy, to which may be added a little glycerin to moderate, but not to arrest, evaporation.

UNUSUAL FORMS OF ERYTHEMA.

ERYTHEMA INDURATUM SCROFULOSORUM.

Bazin,² under the title ÉRYTHÈME INDURÉ SCROFULEUX, first described a manifestation to which attention has again been called in a much completer manner by Hutchinson,³ T. Colcott Fox,⁴ J. C. White,⁵ and others, under the same name or as ERYTHEMA INDURATUM SCROFULOSORUM. The lesions, usually occurring on the legs, and most frequently on the backs and outer parts, consist of indolent, deep-seated, dusky reddish, violaceous nodules and nodes, variable as to size, which pursue a slow course and undergo involution by being absorbed or by breaking down and suppurating or by ending in complete necrosis. When the latter occurs, a punched-out, circular or oval, sluggish ulcer results, resembling that of a syphilitic gumma. The lesions usually appear in successive crops, the course of the disease extending over a considerable period. The subjects of this disease are in most cases markedly below standard in general health. The disease is regarded as a manifestation of scrofula. It possesses features resembling somewhat erythema nodosum, with which disease it may be confounded.

A singular form of erythema occurs in connection with the rare disease involving muscle and skin, DERMATOMYOSITIS ACUTA, as originally described by E. Wagner, Hepp, and Unverricht, and later by others.⁶ The involvement of the skin is one of the essential symptoms of the disease. It is characterized usually by a livid diffuse redness, often defined

¹ Brit. Jour. of Derm., May, 1894.

² Leçons Théoriques et Cliniques sur la Scrofule. Paris, 1861.

³ Archives of Surgery, Oct. 1893.

⁴ Brit. Jour. of Derm., Aug. and Oct. 1893.

⁵ Jour. of Cut. and Gen.-Urin. Dis., Nov. and Dec. 1894.

⁶ For cases and the literature, see articles by Buss and Herz in Deutsch. Med. Wochensch., No. 41 (Oct. 11), 1894.

in outline, almost as in erysipelas, which is generally more distinctly marked in the evening than in the morning. It occurs over the region of the affected muscles, mostly the legs, the skin, in addition to the redness, being slightly œdematous, and generally very painful on pressure. Sometimes the erythema is macular or roseolar.

ERYTHEMA ELEVATUM DIUTINUM.

Under the provisional name *ERYTHEMA ELEVATUM DIUTINUM* Crocker and Williams¹ describe a case occurring in a girl aged six, in which the lesions, occupying the hands, elbows, knees, and buttocks, were erythematous, raised, and persistent. They were pale-purplish red in color, in some localities sharply defined, in others nodular and irregular in outline. To the touch they were firm, very tender, but not painful except when pressed upon. There was no itching or burning. The microscope showed a chronic inflammatory process affecting the corium, the fibrous tissue being more developed in the older lesions, but the cause of the disease was not explained. Jonathan Hutchinson² and Bury³ have also observed similar, if not identical, cases. Bury's extraordinary case was reported under the title "erythema with remarkable nodular thickening and induration of skin," associated with intermittent albuminuria. The case was a girl (Ellen B.) aged twelve, and the symptoms were similar to those in the Crocker and Williams case, except that they were all much exaggerated, the disfigurement and distortion of the hands being remarkable and singular. The term erythema applied to a condition of nodular disease with hypertrophic changes in the integument is obviously a misnomer. All will probably agree that the disease should have a more appropriate place in classification. Hutchinson's cases do not correspond closely with those of Bury and of Crocker and Williams, but may nevertheless be referred to here. One case was described and reported under the title "symmetrical purple congestion of the skin, in patches, with induration,"⁴ but this title does not convey an idea of the disease (as represented in the plate), which consisted of a vascular fibrous formation in the skin. Two additional cases of a milder and more distinctly erythematous form are recorded by Hutchinson.⁵ In both the disease consisted of large, dusky-red, purplish, thick, smooth, raised patches with a border a quarter of an inch high. In all of Hutchinson's cases the subjects were over fifty years of age, and at least two of them were sufferers from chronic gout. The lesions resisted treatment of all kinds, and spread slowly over the body. Crocker is of opinion that his case and Bury's represent

¹ Brit. Jour. of Derm., Nos. 63 and 64, vol. vi., 1894 (with colored portrait).

² Brit. Jour. of Derm., Nov. 1889.

³ Illustrated Med. News, vol. iii., Feb. 23, 1889, p. 145. The case has been republished by Mr. Hutchinson in his Archives of Surgery, vol. ii. No. 8, Plate lxi.

⁴ Brit. Jour. of Derm., Nov. 1889. The portrait is given in Hutchinson's Illustrations of Clinical Surgery, Plate viii., Fig. 2, London, 1875.

⁵ Archives of Surgery, vol. i. p. 372.

the same disease, but that there exist differences of considerable importance between these two cases and Hutchinson's cases. The disease, in Crocker's opinion, has been described and modelled in the Hospital St. Louis, Paris, as "fibromes multiples nodulaires des extrémités, histologiquement fibromes fasciculés." In one of Hutchinson's cases the disease disappeared in the course of time, which would militate somewhat against the view of its being fibromatous in nature. The author agrees with Mr. Hutchinson in thinking it possible that the Bury type of disease may be the beginning of the very remarkable disease causing deformity of the hands and feet which existed in the now well-known Sömmerring-Behrends case.¹

ERYTHEMA GANGRÆNOSUM.

The existence of this rare form of disease, characterized by gangrenous changes occurring in the most superficial strata of the epidermis and skin, has been doubted by some observers. But there seems to be evidence to prove that the condition may occur. It is not to be confounded with the more deeply seated dermatitis gangrænosa, which is a commoner affection, and to which reference will be made elsewhere. Jamieson² reports the following case (with portrait) occurring in a woman aged nineteen. Rosy, punctate, round or crescentic patches, of variable size, as a rule unaccompanied by pain, appeared at intervals on the limbs, chest, back, and loins. Recent lesions showed the epidermis to be normal, smooth, and glistening. In the course of a few days the surface became dry and harsh, and a thin scab of parchment-like epidermis formed, which eventually scaled off, leaving a pink macule which was slow to disappear. It was proved that the lesions were spontaneous and were not due to any application that the patient had made with a view to deception. The disease is similar to, but much milder than, certain forms of symmetrical gangrene of which Neumann has figured a remarkable case in his Atlas of Skin Diseases. Except for the peculiarity of the lesion being remarkably superficial, it would not be entitled to mention here. Dermatitis gangrænosa, to which group of diseases gangrenous erythema more properly belongs, is considered in another chapter.

ERYTHEMA PERNIO.

Syn., Chilblain; Pernio; Perniosis; *Fr.*, Engelure, Érythème Pernio; *Germ.*, Frostbeule.

Symptoms.—This variety of erythema, known popularly as CHILBLAIN, occurs in cold weather, being due to the direct local influence of prolonged cold upon the extremities of the body, especially the toes, feet, fingers, and hands, but the tip of the nose and the ears may also be

¹ Portraits of this case are reproduced by Mr. Hutchinson in his Archives of Surgery, vol. ii. No. 8, 1891.

² Diseases of the Skin, 3d edition, Philadelphia, 1892, p. 111.

attacked. It is particularly prone to occur in those whose circulation is weak, either temporarily or permanently, and in persons of strumous, lymphatic constitution. But it may also occur in the healthy as well as in the weakly, and, moreover, in those who are properly housed as well as in those exposed to wind and cold. Damp cold is more potent in producing the disease than dry cold. It manifests itself in the form of ill-defined or circumscribed, dusky-reddish erythematous spots and patches, macular and maculo-papular in form, especially on the sides and backs of the toes and fingers. They may bear considerable resemblance to the maculo-papules of erythema multiforme, especially on the fingers, and where the process goes beyond the erythematous or papular stage, vesico-papules and vesicles appear, when the resemblance to erythema multiforme may be even more marked. The lesions appear, as a rule, insidiously, and are tender and the seat of itching, burning, and pain, which is worse when the part becomes warm. The subjective symptoms are generally worse in the evening than during the day, according to my observation, even though the person be not exposed to heat. Occurring on the feet, their usual site, they are aggravated by rubbing and friction, as from the shoes in walking. If neglected, marked stasis, followed by vesication and superficial ulceration or even gangrene, may set in. Chilblains are commoner in certain countries of like latitude than in others, doubtless owing to the peculiar construction and heating of the dwellings, which in some countries are cold, and often damp, and imperfectly heated. Thus, in Italy and in some other European countries the author has found the affection to be of much more frequent occurrence than in the United States. It is commoner in children and elderly persons than in adults in middle life. The lesions tend to persist and to run a chronic course under the conditions which have caused them. They are liable to recur under similar circumstances with succeeding seasons.

Pathology.—Chilblains, or perniones, as stated, are the result of cold, dampness, and especially feeble capillary and general circulation, and are characterized by local passive congestion, stasis, swelling, and exudation, constituting a chronic form of passive inflammation. More or less hemorrhage, occurring through diapedesis, may also complicate the process. They may lead not only to vesication and necrosis, but also ultimately to various other forms of disease, for the most part vascular, hypertrophic, and fibrous, as in the permanently affected dusky-reddish, bluish fingers and toes and ears sometimes met with. They are allied in their pathology to the papules and vesico-papules of erythema exsudativum multiforme, localized rosacea, symmetrical gangrene of the extremities (Raynaud's disease), and other local asphyxias. **DERMATITIS CONGELATIO**, or actual freezing of the skin, is not only a more advanced but also a different pathological condition, and is to be considered in connection with dermatitis from caloric.

The disease belongs to the group of "stasis dermatoses," to which reference has been made elsewhere, the process being marked by stagnation in the venous circulation. There is change in the tone of the vessels, that of the veins being high and that of the arteries low. It is not entirely due to the influence of cold: other factors are also concerned. Thus, in persons who are subject to chilblains, the skin even in warm weather will usually show some signs of imperfect circulation and stasis, in the form of cold or clammy or cyanotic hands and feet.

There exist certain rare conditions of the skin, for the most part obscure in origin and nature, allied to chilblains, in which the lesions are vesicular, pustular, or ulcerative, to some of which Hutchinson¹ has directed attention. This writer proposes the name *BLAIN* to express any dusky erythematous swelling with tendency to ulcerate, similar to chilblain; affections of this general character he believes are not necessarily due to cold, but may also result from exposure to the sun and to fire (*SUN-BLAIN*, *FIRE-BLAIN*).²

Treatment.—The treatment of *pernio* consists in the removal of the causes, as far as this is possible, the use of proper clothing, and at first the application of mild lotions and ointments, and later of stimulating remedies. The stage of the process, and the extent of the damage to the parts, must be taken into consideration. In the first stage of chilblain counter-irritant remedies are not to be resorted to, but rather such remedies as are useful in acute dermatitis from any cause, as, for example, zinc oxide and calamine lotions, covering the parts with cotton-wool cloths. I have found a weak (five grains to the ounce) "compound zinc sulphide lotion" useful; also a weak lotion of fluid extract of *grindelia robusta*. If there exist actual dermatitis (*DERMATITIS CONGELATIO*) the disturbed circulation and innervation of the affected parts are to be restored gradually rather than rapidly, lest further obstruction, stasis, and gangrene be brought about in the part. Frictions made with the hand, with the aid of indifferent dusting-powders to prevent abrasion of the epidermis, and immersion in cold or very hot water, are useful. Approach to the fire is in all cases to be avoided. In the case of complete stasis or actual dermatitis (*congelatio*, freezing) having set in, such a proceeding is dangerous, because of the sudden thaw causing disruption of the capillaries.

For the chronic forms of the disease a useful liniment, highly esteemed by Erasmus Wilson, consists of the white and yolk of one egg, and one ounce each of spirit of turpentine and distilled vinegar, well shaken together. This may be weakened by more vinegar or increased in power and made more analgesic by laudanum, camphor, or chloroform, and more stimulating by cajuput or ammonia. Soap liniment six parts and tincture of cantharides one part is a well-known English remedy. Camphorated

¹ Lectures on Clin. Surg., Lond., 1879, p. 362.

² Archives of Surgery, vol. i., 1889-90, p. 241.

oil and lanolin, two parts to twenty parts; ichthyol; cayenne pepper, rubbed in; oil of eucalyptus, painted on; and tincture of iodine (one of the most generally useful remedies), may all be used. If vesicated or ulcerated, oxide of zinc ointment or paste; balsam of Peru ointment, one drachm to the ounce; and Balfour's well-known ointment, consisting of equal parts of resin ointment and spirit of turpentine, may be used. The potash and soda salts may also be advantageously employed, as in the following: Biborate of sodium, $\mathfrak{z}\text{i}$; ungt. aq. rosæ, $\mathfrak{z}\text{vii}$. Caustic potassa, $\frac{1}{2}$ per cent.; glycerin and alcohol, $\mathfrak{a}\mathfrak{a}$, twenty per cent.; and water, sixty per cent., is a remedy much used for chilblains (and also for CHAPPED HANDS) in Japan, and is recommended by Baelz. The hands are bathed in warm water and the application rubbed in once daily, cure usually resulting in a few days.

In Russia, according to Lapatin, for slightly frost-bitten parts a lotion consisting of equal parts of dilute nitric acid and peppermint water is much used, applied at first once a day and later twice daily. In three or four days the skin becomes darkened, and the epidermis is shed, healthy skin appearing under it. Cure is said to result in from ten to fourteen days. A similar remedy consists of sulphuric acid and water, $\mathfrak{z}\text{ss}$ to $\mathfrak{z}\text{iv}$, the part to be bathed with it for five or ten minutes.

ERYTHEMA EXSUDATIVUM MULTIFORME.

Syn., Fr., Érythème polymorphe.

ERYTHEMA EXSUDATIVUM MULTIFORME IS AN INFLAMMATORY DISEASE, CHARACTERIZED BY SYMMETRICAL, BRIGHT OR DARK REDDISH, MORE OR LESS VARIEGATED, MACULES, PAPULES, AND VESICLES, OCCURRING DISCRETELY OR IN PATCHES, OFTEN SHARPLY DEFINED, AND MARGINATE, OF VARIOUS SIZE AND SHAPE, RUNNING AN ACUTE COURSE.

Symptoms.—The disease is usually distinguished by the variety of its lesions, which manifest themselves either as erythematous patches or as maculo-papules, papules, vesico-papules, or even as vesicles and blebs (ERYTHEMA VESICULOSUM *seu* BULLOSUM). The inflammation is acute and active, and the lesions grow and spread with rapidity, changing their aspect from day to day. The macules and papules are at first bright or dusky red, and generally stand out boldly; a few days later bluish-white, purplish, or bluish tints begin to appear. Under pressure the blood disappears readily, but returns promptly on its removal. The lesions, especially the maculo-papules and papules, are œdematous, but elastic. When patches occur, they are apt to be of the most varied shapes and sizes. The peculiarities of configuration which the lesions assume have given rise to the terms *circinatum*, *annulare*, and *marginatum*, in connection with the disease, according as they happen to represent one or another of these forms. Thus, when the patch is circular, fading in the centre as the disease extends on the periphery, it is termed ERYTHEMA CIRCI-

NATUM. Occasionally a series of concentric rings are formed (ERYTHEMA ANNULARE). When variegated colors prevail, as red, purple, yellow, blue, and gray, more or less iridescent, the condition is designated ERYTHEMA IRIS. But the coloring of the lesions in all the varieties throughout their existence, especially as they reach maturity, is peculiar, mother-of-pearl grayish or bluish-white opalescent tints being usually present, especially about the elevated edges of the lesions. Frequently the patches, after spreading over considerable surface, fade in the centre, and terminate with a sharply defined margin, as in ringworm, this form being known as ERYTHEMA MARGINATUM. This is a common manifestation. The lesions have a tendency to be circumscribed, to spread on the periphery, and at the same time to clear away more or less in the centre. Sometimes, by the fusion of patches and circles, festoons and gyrate figures, more or less complete, merged, or broken, are formed (ERYTHEMA GYRATUM ET FIGURATUM).

In place of erythematous patches, the disease very frequently appears in the form of circular or irregularly shaped papules (ERYTHEMA PAPULOSUM). It is in this form that the affection is commonly encountered. It consists of isolated or aggregated maculo-papules or flat or convex papules, variable as to size, but averaging from one-eighth to one-half inch in diameter. It is the commonest expression of the disease. The lesions are bright red, dark red, bluish red, or violaceous in color, disappear under pressure, and soon begin to show a pale centre and to fade, seldom lasting longer than a fortnight,¹ and sometimes only a week or less. Sometimes the lesions, especially the erythematous and papular, are associated with a distinctly urticarial element (ERYTHEMA MULTIFORME URTICANS); in other cases more or less hemorrhage takes place (ERYTHEMA MULTIFORME PURPURICUM).

HERPES IRIS.

There are two varieties of the disease in particular that require special description. In one the lesions are vesicular and bullous, arranged usually in clusters or in closely aggregated rings; in the other they are vesicular, and are arranged in wide-spread circles or segments of circles, from the coalescence of which gyrate or serpiginous lesions result. Both varieties are herpetie, in the sense that they are either grouped or pursue a creeping course. In the first a single vesicle or bleb forms, close around which in a day or two a ring of variously-sized vesicles appears, to be followed by another ring of vesicles or blebs, the original lesion in the mean time drying up. The degree of erythema varies, but is usually marked and in the form of a red zone, upon which the vesicles

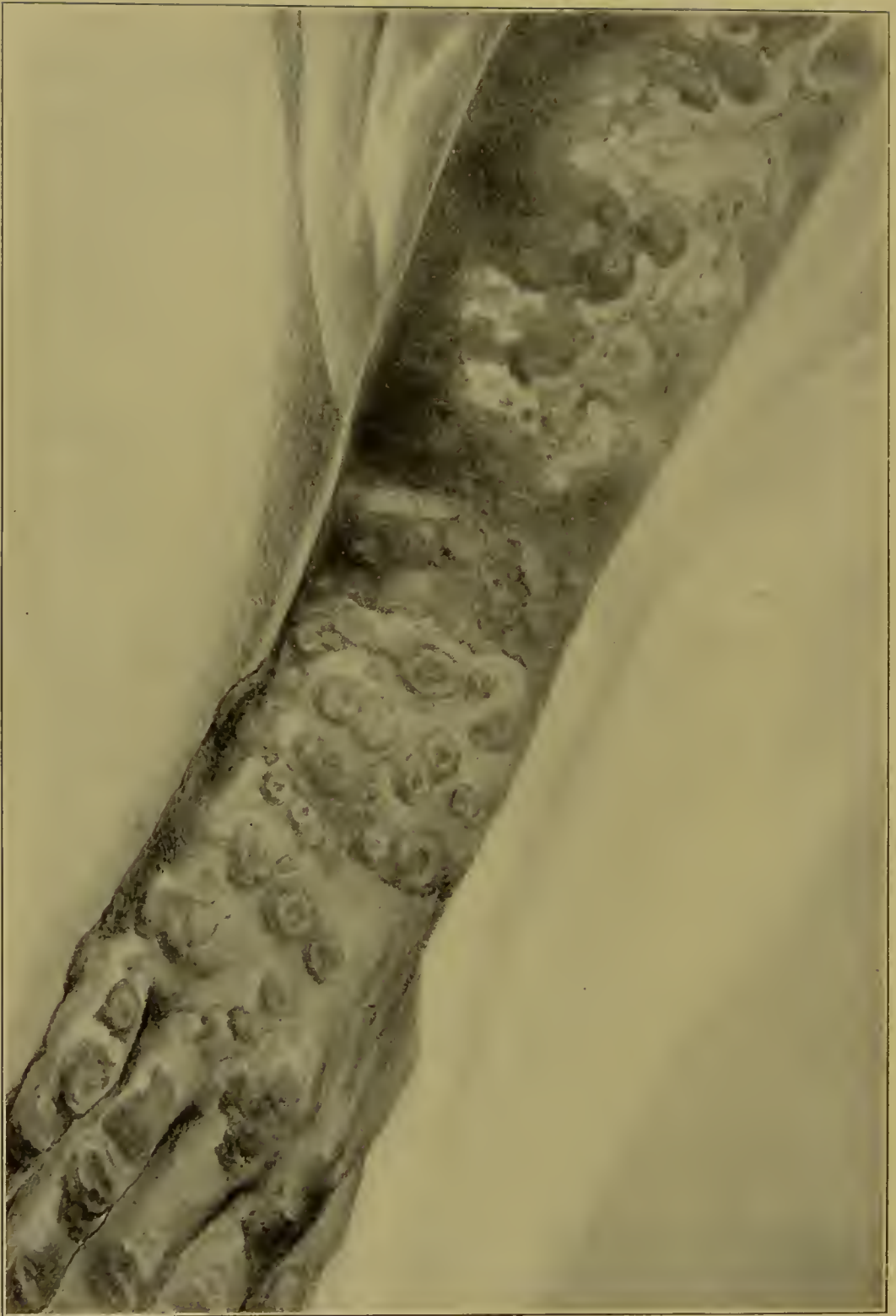
¹ I am of opinion that the disease is generally of a milder character in the United States than in Europe, severe cases, such as are not uncommon in Europe, being seldom met with. In Philadelphia the disease is usually mild in its expression, and moreover is not of frequent occurrence.



ERYTHEMA MULTIFORME.

MARGINATE ERYTHEMATOUS VARIETY.

It exists in the form of large, confluent areas, occupying the greater part of the entire surface. The skin is of a raspberry-red color. Marginate patches are everywhere conspicuous. Here and there only small areas of unaltered skin exist, the manifestation being nearly universal. An unusually extensive development. Duration eight days. (Dr. GEORGE HENRY FOX's case.)



ERYTHEMA MULTIFORME.

ACUTE, MARGINATE, ERYTHEMATO-VESICULAR VARIETY.

One arm and hand are portrayed, but the disease was symmetrical, and the entire surface of the body was subsequently invaded with erythema. Duration of the lesions depicted, one week; of the disease, six weeks, the process terminating in dermatitis exfoliativa with epidermic casts. A rare form of the disease as regards its course and the termination. (The AUTHOR'S case, from a water-color drawing.)

or blebs are seated. In some cases a red spot (erythema) appears first, upon which the vesicle or bleb forms, in other cases the vesicle or bleb arises from the skin without much or any previous erythema. The rainbow colors are usually marked. It constitutes *HERPES IRIS*, so called especially by the older writers.

The second variety is vesicular from the beginning, and in the form of rings of vesicles, often extensive, with sometimes an erythematous base and at other times without the existence of erythema. I have seen this rare manifestation on the trunk more frequently than elsewhere, usually in children, and the symptoms are so different from those of ordinary erythema multiforme vesiculosum, especially if there exists no erythematous base, that the diagnosis of erythema multiforme would scarcely occur to the observer. In the few cases I have seen, general symptoms have been wanting, and the affection has been mild, and of short duration. The herpetiform character, particularly in the vesiculation and the mode of extension, is similar to that which is found in some cases of *tinea circinata*, due to the *trichophyton* fungus, but there is less inflammation, and the spreading of the disease and vesiculation are much more extended, and are remarkably rapid and ephemeral. The rings may be two or three inches in diameter, with in some cases rings within rings, the pearly iridescence of the vesicles being in most cases notable. This affection is much more superficial than the common papulo-vesicular and vesicular manifestation, as seen usually on the backs of the hands and feet, and also from the grouped and ringed vesicular and bullous form described. It presents a different picture clinically from the other forms of the disease. Like the other and more common variety, it, also, is known as *HERPES IRIS*. The erythematous form is depicted in Erasmus Wilson's atlas as "erythema iris—herpes iris," but, as stated, it may also occur without the existence of marked erythema.¹

All the varieties mentioned represent but different forms and stages of one process. It is not rare to see several of these manifestations together, the lesions frequently running into one another. It is this polymorphous and protean character of the lesions, and the varied forms that follow, that have given rise to the name by which the affection is now generally known,—erythema multiforme.

REGIONS INVADIED.

It attacks certain regions of the body in preference, the backs of the hands and feet, and the forearms and legs, being the localities commonly

¹ The common papulo-vesicular form of erythema multiforme was described and depicted by Bateman (*Delineations of Cutaneous Diseases*, London, 1817, Plate LII; also in a *Practical Synopsis of Cutaneous Diseases*, London, 1813) under the name "herpes iris." The term "herpes circinatus" was adopted by Bateman to represent what is to-day known as *tinea circinata*, or ringworm of the general surface, due to the *trichophyton* fungus, as depicted in Plate LI in his *Delineations*.

invaded. It occurs symmetrically. The hands and fingers, including the knuckles, are most frequently attacked,¹ and the disease almost always begins here. It also shows itself about the face, especially the forehead, in the form of macules, maculo-papules, and papules, and upon the trunk.

Sometimes, beginning as an ordinary papular manifestation on the backs of the hands and fingers, it spreads and becomes general, when it becomes erythematous in form, involving it may be the whole surface, as in an instance recorded by the author.² The disease in this case was attended with marked constitutional and febrile symptoms, especially at its height, at which period every portion of the entire skin was invaded, when it closely resembled dermatitis exfoliativa. In fact, beginning as a typical papular erythema multiforme it passed into an acute exfoliative dermatitis, with large flaky exfoliation. The corneous layer of the epidermis of the hands and feet came away as a cast, that of the hands being entire and like a glove.

The lesions are sometimes encountered on the mucous membrane, especially in the mouth and throat. They vary in character much as they do upon the skin, and may consist merely of diffuse erythema. They are accompanied generally with œdema and swelling, and if vesicular terminate in excoriated patches.

The subjective symptoms in the usual forms of the disease are seldom marked. As a rule, itching and burning are slight, notwithstanding the hot and angry look which the eruption often assumes; but sometimes they exist markedly.

SYSTEMIC DISTURBANCE.

Symptoms of general or systemic disturbance, according to the mildness or the severity of the attack, may or may not precede and accompany the disease. They are variable. Sometimes, as in the milder expressions of the disease on the backs of the hands, they are altogether wanting. On the other hand, much disturbance, with elevation of temperature, sometimes high (104° F.), may exist. As a rule, in cases of average severity, some or even all of the following symptoms, slight or severe in degree, may exist: malaise, headache, rheumatic fever, rheumatoid or rheumatic pains, sore throat, articular swellings with pain, gastric and intestinal derangement, and cardiac affections, especially murmurs and endocarditis. Of these the rheumatoid symptoms are usually the most frequent and conspicuous. The occurrence of the latter symptoms is well known in this disease. Frequently there is a family history of rheumatic fever, and often the patient has a personal history of the same kind. The association of erythematous and erythematopapular

¹ See Plate CC in author's Atlas of Skin Diseases, showing the usual form of the disease.

² Trans. Amer. Derm. Assoc., 1891, New York.



ERYTHEMA MULTIFORME.

LENTICULAR PAPULAR VARIETY.

The extensor surfaces of the hands and fingers, especially the knuckles, of a young woman are affected. No other region was involved. Duration one week. Lesions are at the acme of their development. A common form of the disease, and an average case as regards number of lesions and the distribution. (The AUTHOR'S case, from a water-color drawing.)



ERYTHEMA MULTIFORME.

PAPULO-VESICULAR VARIETY.

The extensor surfaces of the hands and forearms of a middle-aged man are the seats of numerous, disseminate, large papulo-vesicles, annular in form, with raised vesicular borders and central superficial crusts. Duration eight days. (The AUTHOR's case.)

manifestations with rheumatic and arthritic disease was recognized by both English and French physicians in the last century. Alibert, Cazenave, Rayer, and more recently Coulaud¹ and Garrod,² have directed special attention to the subject.

EVOLUTION OF THE LESIONS.

The evolution of the disease is varied, peculiar, and to a certain extent capricious, so that in the beginning of an attack, whether the lesions be few or many, it is impossible to foretell what the final outcome of the eruption will be. Thus, it may not advance beyond a few erythematous or papular lesions, or they may spread and coalesce, forming large, irregularly shaped, usually marginate areas of disease of the same character. In place of this course, these lesions may evince a more or less marked disposition to vesicate or to become vesicular or even bullous, vesiculation not infrequently being present in all stages of development. As a rule, vesiculation is imperfect, as though this process had been attempted and only half completed. The terms vesication and abortive vesiculation both express the idea. It is peculiar, and is a process *sui generis*. Where this takes place the maculo-papule sooner or later becomes somewhat depressed or dried up in the centre, with a slightly elevated, semi-vesicular, grayish or bluish-white, mother-of-pearl colored, opalescent, ring-like margin. This coloration is characteristic. The presence of exuded fluid beneath the horny layer, in the mucous and papillary layers, occurs in an extremely variable degree, but is a common, almost constant, symptom of the disease. When the lesions are papular only, as they grow older they become depressed somewhat in the centre and show a bluish-red or purplish stain. There are numerous other modes of evolution of the primary erythematous lesions, as into vesicular and bullous concentric rings, grouped vesicles and blebs, or marginate semi-vesicular patches. The irregular involution of the eruption as a whole, with a marked tendency for new lesions to appear while earlier ones are disappearing, makes the course distinctive and peculiar.

There are differences of opinion as to the occurrence of hemorrhage in the cutaneous lesions. In the milder cases there is none, but as the severity of the process increases an extravasation of blood may occur. It may take place by diapedesis or by rhexis, usually the former. Its occurrence, if extensive, is to be viewed as a complication. Cases in which distinct purpuric spots exist are in most instances to be regarded rather as purpura rheumatica (peliosis rheumatica) or other varieties of purpura. It is generally recognized that erythema multiforme and purpura rheumatica have much in common, and are closely allied in their general etiology and pathology, with which view the author is entirely in accord.

¹ De l'Érythème papuleux dans ses rapports avec le rhumatisme. Paris, 1875.

² Treatise on Rheumatism and Rheumatoid Arthritis. London, 1890.

The close relationship between erythema multiforme vesiculosum and the "herpes iris" of some authors, and the "hydroa aigu vésiculeux" of Bazin, has long been recognized. They are regarded now as different manifestations of the same process. Erythema vesiculosum and erythema bullosum are merely advanced stages of erythema iris. The relationship of erythema multiforme to erythema nodosum is likewise close, in some cases much more so than in others. In most instances, however, the diseases have certain distinctive points of difference.

The course of the disease is acute. The lesions continue from one to two or four weeks, at the end of which time the eruption generally disappears spontaneously, leaving pigmentation, and sometimes desquamation. Vesicles and blebs, when they occur, are usually of short duration, and are not often followed by crusting. During the course of the disease new crops of lesions are apt to develop. Sometimes in this way the eruption is much prolonged.

It manifests a distinct disposition to recur, especially annually, and instances are not rare in which attacks occur year after year, and occasionally for ten or fifteen years. Sometimes a year or two will be skipped. Distinctly periodical recurrences sometimes occur, as, for example, with each menstrual epoch.

UNUSUAL FORMS AND COMPLICATIONS.

The complications which are liable to accompany or to precede erythema multiforme are varied, and are so diverse in kind that the subject may be best considered by referring to some recorded observations. In some of these cases, for the most part of a grave character, the nature of the disease may be said to be obscure. I believe, however, that most of such cases should be looked upon as infectious. Thus, occasionally disease of the respiratory and alimentary tracts, heart, kidney, spleen, brain, and cord occurs, due to the same influence that has produced the cutaneous affection. Such cases exemplify a general and not merely a cutaneous disease. Occasionally the disease begins with headache, involvement of the air-passages, particularly with sore throat, salivation, and articular pains, to be followed sooner or later by the eruption on the skin. Such cases may further be characterized by relapses extending over many months, as Schutz¹ has shown. Spencer² has recorded a somewhat similar case, in which severe lumbar pains preceded the eruption, with a temperature of 104° F. on the ninth day, and a day pulse of 130 on the eleventh day. With such marked general symptoms existing, one may conceive how readily an error in diagnosis may be committed before the cutaneous eruption appears, as may happen with the well-known group of so-called "eruptive fevers." Vidal has noted death in two cases of erythema multiforme with the symptoms of an

¹ Univ. Ann. of the Med. Sci., 1890, vol. v.

² Brit. Med. Jour., Sept. 6, 1884, p. 465.



ERYTHEMA MULTIFORME.

CIRCINATE, ERYTHEMATOUS AND BULLOUS VARIETIES.

The disease occurs in a young negress, and occupies the face and the upper extremities symmetrically. The lesions on the face are erythemato-vesicular, circinate, and tend to coalesce, while those on the forearm are bullous, more or less circinate, and, owing to their confluence, serpiginous. Duration one week. (Dr. HENRY W. STELWAGON'S case.)



ERYTHEMA MULTIFORME.

VARIETY ANNULATUM ET GYRATUM.

The subject is a middle-aged, spare woman, in average health. The lesions are erythematous in character, and are slightly or not at all elevated above the surrounding healthy skin. They consist of circinate, annular, discrete and confluent, gyrate or distinctly serpiginous, for the most part linear, reddish markings, occupying the trunk and extremities symmetrically. They show a notable tendency to coalesce wherever they exist in proximity. Duration five days. (Dr. HENRY G. PIFFARD'S case.)

infectious state involving the kidney, lungs, and brain.¹ Lewin² describes a malignant form, and out of a total of one hundred and twenty-six observations of the disease (of which fifty-six were personal) ten instances of death were recorded.

Leloir³ reports death in a case where, twelve days after the beginning of an erythema multiforme with bullous and hemorrhagic primary lesions, typhoid and profound adynamic symptoms set in. The autopsy disclosed marked pulmonary congestion, albumin in the urine, and microbes (diplococci and streptococci) in the blood and urine.

Molènes-Mahon⁴ refers to observations in which seven deaths are reported. Consecutive cardiac lesions have been reported by Gerhard, who refers to twenty-two cases of endocarditis occurring in the course of or following polymorphous erythema, while Uffelmann thinks that this affection may be a determining cause of pulmonary tuberculosis.⁵ Cases of this kind, except when accompanied with general hemorrhage, in which case they are to be regarded rather as forms of purpura, are rare in this country.

Osler⁶ has directed attention to the visceral complications of "erythema exudativum multiforme," citing personal observations in Baltimore, but, as in most of the cases general hemorrhage in varied forms was a constant symptom, and as at no time did erythematous lesions exist, it seems to me that such cases should be regarded rather as purpura than as erythema multiforme. This writer calls attention to the fact that in two of the cases there were occurrences of severe attacks without cutaneous manifestations, the lesions being entirely visceral.

Etiology.—The affection is somewhat peculiar in that it generally makes its appearance during the spring and autumn. It occurs, however, also not infrequently at other periods of the year,⁷ particularly in winter, and at times appears in an epidemic form. I am of opinion that atmospheric conditions and the state of the weather, especially as to rain and dampness, have more to do with the production of the disease than the time of year. It is, I am inclined to believe, of more frequent occurrence during humid seasons, whenever these may happen to occur. As elsewhere stated, the disease is generally accompanied with rheumatoid or rheumatic symptoms, and in some instances bears a close resemblance

¹ Quoted by H. Leloir, *Traité descriptif des Maladies de la Peau, Symptomatologie et Anatomie pathologique*, by Leloir and Vidal, Paris, 1889-1893, p. 307.

² *Charité-Annalen*, Bd. iii. Berlin, 1878.

³ *Loc. cit.*, p. 308.

⁴ *Contribution à l'étude des maladies infectieuses.—De l'érythème polymorphe.* Thèse de Paris, 1884, No. 60.

⁵ Quoted by Leloir, *loc. cit.*

⁶ *Amer. Jour. Med. Sci.*, Dec. 1895.

⁷ For further information upon this and other points of interest, see a report by Lipp, *Archiv für Dermatologie und Syphilis*, vol. iii. p. 221; also an article by Moriz Kohn (Kaposi), in the same journal, vol. iii. p. 381, and communications by Lewin, *Berl. Klin. Wochenschr.*, Nr. 23, 1876, and *Charité-Annalen*, Bd. iii. p. 622, and by Schult-hess, *Correspondenz-Blatt der Schweizer Aerzte*, xxv. Jahrgang, Feb. 1, 1895.

to purpura rheumatica. Where well-defined purpuric lesions exist, such cases may, in the majority of instances at least, be more appropriately classed with purpura. The disease is more common in the female, and is met with usually in adolescents, but is not rare in adults up to the age of forty.

Pathology.—The disease is dependent upon an impression made by varied causes primarily upon the nervous system and secondarily upon the blood-vessels. It is an angioneurosis. This explanation applies also to most forms of symptomatic erythema, especially to the polymorphous erythemata in general. The infectious nature of many of the polymorphous erythemata, as originally suggested by Trousseau, Hardy, Besnier, Spillman, and others, has been investigated by Simon and Legrain,¹ as well as by others, who are generally of opinion that this observation is undoubtedly true in some cases, a view which to-day I believe no one would be disposed to question. This explanation in most cases of erythema multiforme must be accepted as correct. But that not all are of an infectious nature (as this term is generally understood) is shown by the observation that occasionally the disease may be produced by such causes as moral shock, as in a case recorded by T. Barthélemy.² It occurred in a woman who in returning home from some duty in the late hours of the night was pursued by ruffians through the streets of Paris, barely escaping capture. She reached her home exhausted and frightened. The next day she was admitted to the Hospital St. Louis with a "generalized, eircinate, purpuric erythema" which lasted six weeks.

The author inclines to the view that what we have long been accustomed to call erythema multiforme is really a general disease, of which the cutaneous lesions are usually, but not necessarily, conspicuous symptoms. It seems to be due in many instances to causes similar to those which produce influenza and allied affections. It is well known that in epidemics of influenza erythema multiforme is not infrequently met with.

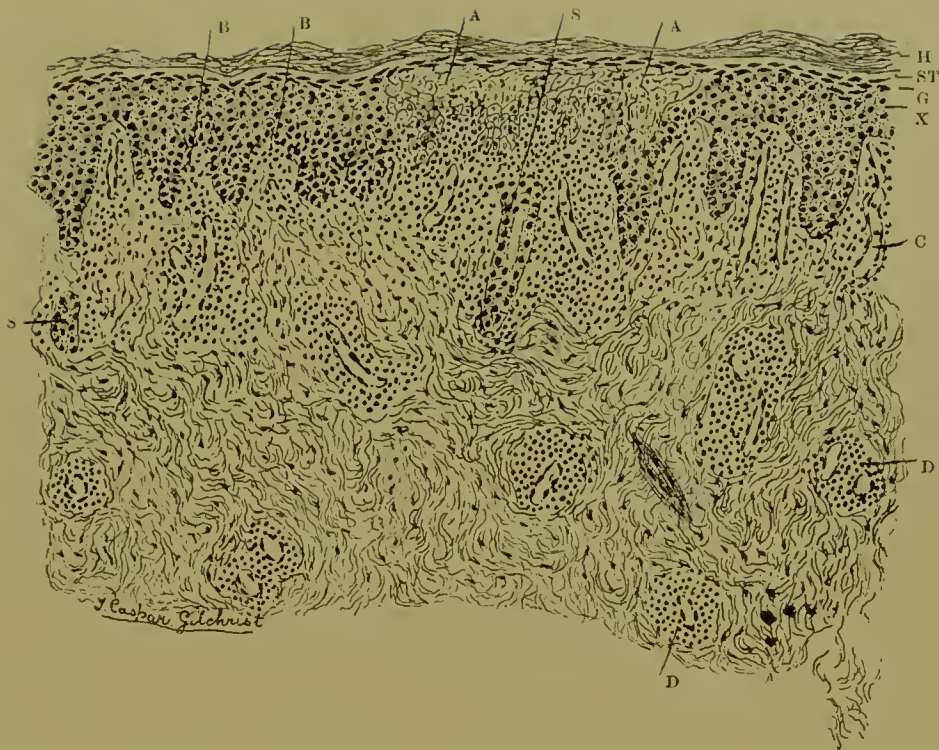
Lewin,³ who has studied the disease closely, admits two forms, one having a long duration with intermissions and relapses, the other infectious, with prodromal fever and complications of the mucous membrane, lungs, and heart. He regards the cutaneous disease as a vaso-motor disturbance, a view which is shared also by other observers. The grave and febrile forms of polymorphous erythema have been investigated by J. Arnaud,¹ who believes the disease to be a fever of a variable remittent or intermittent type, accompanied with a multiform eruption.

¹ Annales de Derm. et de Syph., 1888.

² Étude sur le Dermographisme, Paris, 1893, p. 184.

³ Charité-Annalen, iii. Jahrgang, Berlin, 1878; and Berl. Klin. Wochenschr., Nr. 23, 1876.

⁴ De l'Érythème polymorphe fébrile à forme grave. Lyon, 1883.



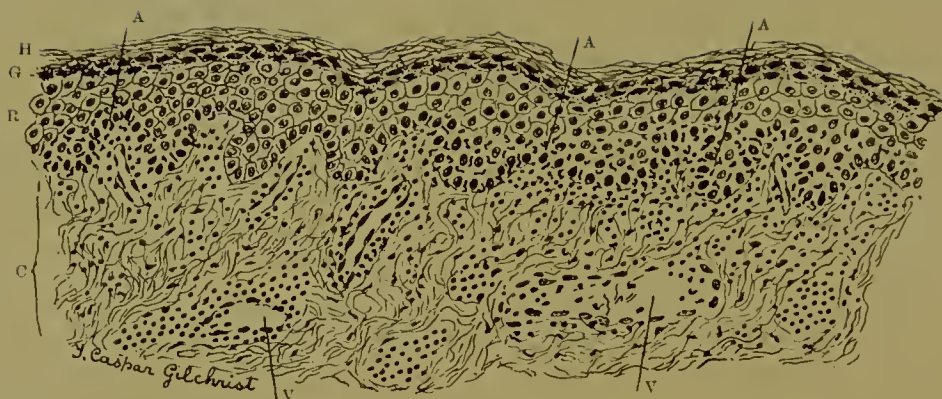
ERYTHEMA MULTIFORME.

PAPULAR VARIETY.

FIG. 1.

The case was that of a woman aged thirty-three who had had the same disease five or six times previously, appearing usually in the spring. The eruption now present was the second that year. The disease always appeared in the same regions,—namely, backs of hands, wrists, face, and lower portion of legs. The present attack appeared a few days before, the lesions being situated on the backs of the hands and on the wrists and forearms. A portion was excised from the margin of a rather large, confluent papular patch, which was dull red, raised, and without scaling.

The horny layer (H) was irregular; the stratum lucidum (ST) was well marked; the stratum mucosum (R) was swollen and thickened, due to swelling of the individual cells and the widening of the interepithelial spaces. The central portion of the section showed somewhat peculiar changes. The strata corneum, lucidum, and granulosum were all well defined, but the entire mucous layer (A, A) presented a striking appearance. The outline of the epithelial cells and nuclei could only faintly be made out, and they had taken on the eosin stain, whereas the other portions of the epidermis and the mucous layer on each side were deeply stained with hæmatoxylin. The appearance was that of a collection of dead cells. Invading this dead area was a large number of polynuclear leucocytes and lymphoid cells. Directly beneath this region of the epidermis the upper portion of the corium was occupied by a large number of polynuclear leucocytes, and a much larger number of lymphoid and oval cells, with marked dilatation of the blood-vessels, but not of the lymphatics. The upper half of the corium beneath the more normal epidermis (B, B) was also invaded by a large number of lymphoid cells and a less number of polynuclear leucocytes, many of which were emigrating into the epidermis (B, B). The lower half of the corium presented well-defined collections (D) of lymphoid cells, with sometimes one or two polynuclear leucocytes arranged around the dilated blood-vessels. The whole corium presented an œdematous appearance. Mast-cells were not more numerous than normal. Magnified about 100 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)



ERYTHEMA MULTIFORME.

PAPULO-VESICULAR VARIETY.

FIG. 2.

This section is from another case of erythema multiforme in a woman, the lesion being in a more advanced stage. She had had an exactly similar eruption on two previous occasions, and with the same distribution,—namely, on the backs of both hands, on the extensor and slightly on the flexor surfaces of both forearms, and on the sides of the neck. The lesions were papular and papulo-vesicular, distinctly raised, flattened, discrete and confluent, roundish and irregular, variously sized, and of a light red color. They had first appeared a day and a half before.

The section of one of the papulo-vesicles showed the chief changes to have occurred in the papillary portion of the corium. The horny (H) and granular (G) layers were unaffected, but the mucous layer (R) was swollen; the epithelial cells were œdematous, and the interepithelial spaces were widened. The lower layers in places (A, A) were much invaded by not only polynuclear leucocytes, but also round lymphoid cells, which were very numerous just beneath the epidermis. The corium (C) presented pathological changes in its upper half only, and these consisted of marked dilatation of the blood-vessels (V) with large collections of lymphoid cells and polynuclear leucocytes round them. The upper portion presented an œdematous appearance. The appendages of the skin were unaffected. In the more advanced stages of this case vesicles were formed beneath the epidermis, accompanied by more pronounced inflammatory changes. Magnified about 55 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)

PATHOLOGICAL ANATOMY.

The degree of exudation in the common form of erythema multiforme, as, for example, in the macular or maculo-papular lesions as seen on the hands, varies with the stage and with the intensity of the process. Leloir¹ has given particular attention to this subject, examining the lesions in different stages of development from a histological stand-point. Simple red spots, or macules, more or less irregular in outline, without apparent infiltration into the skin and terminating with slight desquamation, show upon perpendicular section merely a dilatation of the vessels of the corium, especially of the papillary layer; and, although there is no apparent infiltration of the skin, very slight diapedesis of white and even of red corpuscles has occurred. In the next stage, in which the spots are of variable dimensions and of a bright red or even a bluish tint in places, and are slightly thickened and raised, the phenomena of exudation are marked. The dilated vessels, in particular those of the papillary layer, are surrounded by abundant extravasated lymph-cells, and are engorged with white corpuscles. There are at the same time extravasations of some red corpuscles and of the serum of the blood, colored red without by the hæmoglobin, as this is noted always in the passive exudative inflammations. These observations explain the appearance of the bright red or violaceous spots, as well as the ecchymoses which are often consecutive upon the disappearance of the macule. In the next advanced stage a true papule is formed. In this case there is an exudative hyperæmia of the derma and of the hypoderm, but especially of the derma, together with œdema. Leloir, therefore, does not agree with Lewin in the statement that the exudation always begins in the hypoderm and that the hyperæmia of the derma is consecutive.

According to Cornil and Renault,² migratory cells are more or less abundant in the most superficial layers of the mucous layer of the epidermis, occasionally even being met with in the granular layer. There exists at times a dilatation of the nucleus of some of the cells of the mucous layer, which, together with the profuseness of the migratory cells in this layer, explains, according to these observers, the desquamation of the epidermis. Besides the diapedesis of the white corpuscles there occurs always more or less extravasation of red corpuscles, which are found not only near the vessels but even at a great distance from them, isolated or in groups. In certain forms of papular erythema

¹ Recherches sur l'anatomie pathologique et la nature des érythèmes et de l'érythème polymorphe en particulier, Bulletins de la Société anatomique, 4 Avril, 1884, et Progrès Médical, 1884. See, also, Traité descriptif des Maladies de la Peau, Symptomatologie et Anatomie pathologique, by Leloir and Vidal, Paris, 1889-1893, p. 310. The beautifully executed illustrations of the anatomy of the common lesions in that work may be consulted with advantage in studying this disease.

² Cornil, Cours de la Faculté, Paris, 1884.

with a tendency to hemorrhage these heaps of red corpuscles are of considerable size, and the transformation which the extravasated blood undergoes accounts for the ecchymotic tints which are nearly always consecutive to their disappearance. There are found often between the connecting bundles granular bodies, very small, sometimes angular, and of a clear yellow color, from which proceeds evidently the coloring matter of the blood.

Pathologists have not been able to find the emboli or inflammatory infarcts which Bohn and after him other authors have considered to be the cause of certain varieties of infectious erythemata, and of erythema nodosum in particular; nor, notwithstanding careful research on the part of numerous observers, have any specific microbes been found, although in the case of some of the infectious erythemata various micrococci have been observed. That marked venous stasis occurs in the capillaries is shown by the cyanotic hue which characterizes the lesions. In this respect the condition is much like that which occurs in erythema pernio, or chilblain.

Diagnosis.—When the peculiar coloration and acute course of the lesions, together with their multiform character, are borne in mind, no difficulty should occur in the diagnosis. The absence usually of distinct itching or burning sensations will serve to distinguish it from erythematous and papular urticaria, to which it may bear resemblance. It differs from urticaria in that the eruption is more pronounced in character; possesses a more decided color and form; is more persistent in its course; and in the absence of wheals. From eczema papulosum it is to be distinguished by the absence of severe itching, and by the large size of the papules, as well as by their irregular shape and form. The difference between erythema iris and erythema vesiculosum being one only of development, they are often seen to merge into each other; the diagnosis here would be one simply concerning the variety of the disease. When erythema bullosum exists, pemphigus must be excluded. Erythema nodosum is to be diagnosed from erythema multiforme by its raised, tender or painful, firm or soft, sometimes hemorrhagic nodules, nodes, or irregularly shaped infiltrated patches, which occur for the most part on the extremities, especially the legs, and in particular over the long axes of the tibiæ.

The relation of erythema exudativum multiforme to some varieties of dermatitis herpetiformis may be referred to. It may be stated that some of the spreading, marginate, vesicular, and distinctly herpetic forms of erythema multiforme possess features that occur in the erythematous variety of dermatitis herpetiformis. Erythema multiforme when it takes on this form is herpetiform, and resembles dermatitis herpetiformis, but is not on that account the latter disease. It should be remembered that, whereas erythema multiforme pursues an acute course, dermatitis herpetiformis is generally chronic. Another peculiarity of dermatitis her-

petiformis is that with each relapse or recurrence it is apt to show itself in another variety than the last. With one attack it is erythematous and vesicular, with another pustular, and with the next, perhaps, erythematous, vesicular, pustular, and bullous, all combined. Cases are occasionally met with, however, in which it is difficult to determine if the disease should be regarded as an unusual form of erythema multiforme or as one of dermatitis herpetiformis.

Treatment.—This, as regards internal medication, will depend largely upon the causes which have occasioned the eruption, whether, for example, the case is simple or infectious in its nature, and mild or severe in type. Consequently no rules can be given, nor any definite formulæ suggested. The general condition, the state of the alimentary tract, and the degree of febrile disturbance are all to be taken into consideration. A saline purgative is usually indicated in the beginning of an attack. The patient should be kept at rest, and the diet should be light but nourishing, all stimulating articles of food and drink being avoided. The most useful remedies are such as would be indicated in rheumatism, including salicylic acid and its compounds, salophen, salol, alkalies, saline diuretics and laxatives, quinine, and the preparations of iron. For the relapsing and frequently recurring forms of the disease quinine is perhaps the most valuable remedy we possess. The local applications should be simple. Astringent alcoholic lotions; hamamelis distillate; weak “compound zinc sulphide lotion;” carbolic acid, a drachm or two to the pint of water, with alcohol; and sulphurous acid, diluted with from two to four parts of water, may be found useful. Sodium hyposulphite and sodium salicylate in solution; glycerin and tragacanth jellies; and sometimes carbolic acid and salicylic acid pastes, as in erythematous eczema, may also be made use of. In the milder forms of eruption, as those characterized by small and superficial papular lesions on the backs of the fingers and the knuckles, no special treatment is necessary.

Prognosis.—The affection in the vast majority of cases runs a course towards spontaneous recovery. With or without treatment, it usually terminates in from one to three weeks, generally without leaving any trace of its former existence. It is, in my experience, in almost all cases a benign disease, but a prognosis should not be given unreservedly early in the course of the process. In cases where the temperature is high and the eruption is profuse and general, I have observed that complete recovery may be slow, the patient sometimes suffering malaise and debility for several weeks after the disappearance of the cutaneous manifestations. As has been shown, the disease may be severe, as well as complicated. Relapses may prolong the process, and recurrences, it must not be forgotten, are liable to take place from time to time, especially from year to year or at longer intervals.

ERYTHEMA NODOSUM.

Syn., Dermatitis Contusiformis; *Fr.*, Erythème noueux.

ERYTHEMA NODOSUM IS AN INFLAMMATORY DISEASE CHARACTERIZED BY ROUNDED OR OVALISH, USUALLY SYMMETRICAL, VARIOUSLY SIZED, MORE OR LESS ELEVATED, FIRM OR SOFT, ROSE-RED, YELLOWISH RED, VIOLACEOUS, CIRCUMSCRIBED INDURATIONS OR NODES, RUNNING AN ACUTE COURSE, ACCOMPANIED WITH MORE OR LESS CONSTITUTIONAL DISTURBANCE.

Symptoms.—The cutaneous disease is generally preceded by and ushered in with general systemic disturbance. Febrile symptoms, with a temperature that may be high, and pains of a rheumatic or rheumatoid character, are often marked. Sometimes œdema is one of the first symptoms of the disease. Visceral involvement,¹ and later cardiac and kidney disease, may also be present. The nodes, beginning as deep-seated indurations, make their appearance often suddenly, develop rapidly, and may exist upon various regions of the body, although they have decided preference for the extensor surfaces of the arms and legs, especially the latter region over the tibiæ, with their long axes parallel to the bones. They vary in size from a filbert to a walnut; are firm and elastic or soft; are ovalish or irregularly rounded, in shape; are often distinctly raised; and are tolerably well defined in outline, but are not circumscribed. In color they are rose-red and reddish, with a tendency to become yellowish red in the centre, and later dusky, violaceous, or purplish, becoming darker as they grow older. As they disappear they assume a variegated yellowish, bluish, or greenish tint, resembling the coloration of a contusion, as in the case of ecchymoses. The main factor in the production of the peculiar color of the lesions is the transudation of the coloring-matter of the blood, as is the case in erythema multiforme.

When the disease is typically developed and at its height the lesions are tense and have a shining look, as though suppuration were about to take place, but this very rarely occurs. They almost invariably result in absorption. Cases in which suppuration of the nodes has occurred, however, have been reported by Hardy, Purdon, Haisolt,² and others, but, as stated, this termination is very rare. Sometimes they are more or less distinctly hemorrhagic. To the touch, until the process reaches its height, they are firm, but they become softer as they are about disappearing. They are painful and tender on pressure, and are attended by burning, throbbing, or painful sensations. In number they may vary from two or four to a dozen or more; they may occupy the legs only, or various regions of the body, as the arms, the forehead, and the buttocks,

¹ Amiaud called attention to the visceral complications of this disease as far back as 1879. See *L'Erythème noueux; ses Complications viscérales*. Paris, 1879.

² *Lon. Med. Rec.*, Oct. 20, 1890.



ERYTHEMA NODOSUM.

The disease is confined to the legs of a woman eighteen years of age, and is symmetrical. The lesions consist of numerous, discrete and confluent, deep-red and purplish tubercles and nodes, which are flat or raised above the surrounding skin. The larger ones are painful. There is, moreover, marked rheumatoid pain in the legs, with elevation of temperature and other symptoms of general disease. Some of the larger and older nodes have the appearance of an incipient abscess. Duration ten days. (The Author's case, from a water-color drawing.)

at the same time.¹ As a rule, they do not all appear at once, but come out at intervals in the form of crops, accompanied by elevation of temperature and other febrile symptoms. The fever keeps pace with the eruption, and consequently may remain high for some time. The lesions are generally symmetrical. Sometimes the lymphatic vessels are involved. In addition to the distinctly nodular formations, which are deep-seated, there not infrequently occur raised and flat tubercular lesions, and even erythematous macules, as in erythema multiforme. The affection lasts from two to six weeks, and in almost all cases terminates in spontaneous recovery.

As the lesions disappear, in from one to two weeks, more or less deeply pigmented bluish, "black and blue," greenish, brownish spots remain behind, as occurs in contusions. These discolorations, together with the preceding symptoms, are characteristic, although they vary much in degree. The course of the disease is slower than that of erythema multiforme, as is to be expected in consideration of the extensive extravasation that has taken place from the vessels. About two weeks are required for the evolution and involution of typical nodes, except for the pigmentation, which is slow to disappear. While the disease usually pursues an acute course, occasionally complicated cases are encountered. In rare cases prolonged febrile disease occurs in association with a persisting cutaneous eruption which cannot be distinguished from that of erythema nodosum. J. Hutchinson² and Bäumlér have noted such cases. They are likely at first to be diagnosed as typhoid fever.

At times the disease is mild in type, in other cases it is severe, and all degrees of development between the two extremes are met with. The cases that I have met with in Philadelphia have been, with some exceptions, of an essentially mild type in comparison with those seen in Europe.

UNUSUAL FORMS.

Severe as well as unusual forms of the disease are occasionally encountered. Thus, Demme³ records instances of the disease occurring in five children, three being in one family, in whom there were vomiting, delirium, stupor, then high fever with a temperature of 104° F., followed by widely spread erythematous nodes, chiefly on the legs and forearms, with severe pain. Later, purpuric spots, bloody stools, and gangrene of some of the nodes occurred. The febrile symptoms abated on the appearance of the cutaneous lesions; and all the patients recovered. No bacteria were found in the blood, but micrococci and bacilli were dis-

¹ See Plate V in author's Atlas, showing the usual form and distribution of the disease upon the legs. Excellent portraits may also be found in F. Hebra's, Tilbury Fox's, and Crocker's atlases.

² Archives of Surgery, vol. i., 1889-90, p. 268.

³ Fortschritte der Medicin, Nr. 7, 1888.

covered in the fluid of the tissues of intact nodules, in the blebs, pustules, and gangrenous patches. Occasionally such hemorrhages are so profuse as to prove fatal to the patient, as occurred in a case reported by Wickham Legg.¹ Uffelmann,² Oehme,³ Lailler, Goldscheider, and Buisine⁴ have described an ominous form of the disease occurring in tuberculous families, and for the most part in young persons. In the autopsies tuberculosis of the internal organs was found. Such cases are very rare, and must be classed with the virulently infectious forms of the disease.

The disease has been observed in septicæmic and purulent infections, also as a secondary affection in diphtheria; in typhoid fever; and even in syphilis, occurring as a precocious affection shortly after the fourth month of the primary syphilitic infection, as Despres in 1873 showed, this form having been specially investigated by Leloir, Mauriac, and Testut.⁵ The disease may also occur with influenza, and with malaria.

Etiology.—The causes of the disease in many cases are not understood. It is most frequently met with in weakly, anæmic, or chlorotic individuals, but occurs also in those in good general health. As one of the exciting causes exposure to cold must be referred to. There is no doubt, in my opinion, that atmospheric influences generally have much to do with its production. Rheumatic pains, fever, and joint swellings and pains are frequently present, both before and during the attack. Digestive derangements, as well as other functional disturbances, are often noted, but these symptoms cannot be regarded as causative; they are rather part of the general disease. Like erythema multiforme, it usually shows itself most frequently in the spring, autumn, and winter, especially during seasons of humidity or rain. It is a comparatively rare disease in Philadelphia, and even in other parts of this country. It is of much more frequent occurrence in London and Paris, and in Europe generally, than in the United States. According to the statistics of the American Dermatological Association, only 82 cases out of 123,746 cases of skin disease are reported. It is, however, I believe, commoner than these figures indicate, for the reason that, the disease being acute, many cases do not seek advice at the hospital clinics, but remain at home, and hence are not reported.

Both sexes suffer, but the disease is considerably more frequent in females. S. Mackenzie's statistics make the figures five to one in favor of females, and Schulthess's tables three to one. It commonly occurs in early adult life, especially between the ages of fourteen and twenty-one. It is met with especially in the poorer and overworked classes of society.⁶

¹ St. Bartholomew's Hospital Reports, 1883, xix. p. 177.

² Viertelj. für Derm. u. Syph., 1874, p. 174; 1877, p. 230.

³ Viertelj. für Derm. u. Syph., 1878, p. 324.

⁴ Quoted from L. Brodier, *La Médecine Moderne*, Sept. 9, 1893.

⁵ See L. Brodier, in *La Médecine Moderne*, No. 72, Sept. 9, 1893, p. 895.

⁶ Willan, who described the lesions accurately a hundred years ago, noted that it occurred particularly among servants. See his "Cutaneous Diseases." London, 1808.

Like erythema multiforme, the disease may invade the mucous membrane, especially of the mouth and throat.

Pathology.—The process, as already stated, varies much, not only in the manifestation of symptoms, but also in intensity. It is an inflammatory process, similar in character to the several manifestations of erythema multiforme, but is severer in type, and generally possesses symptoms which are not encountered in that disease. It is a special type of disease. While recognizing, therefore, a close relationship to erythema multiforme, it is well to describe it separately. Hebra¹ was of opinion that in some cases at least it is essentially an inflammation of the lymphatics, the nodes being frequently observed seated on the course of these vessels. But this view does not hold good for the majority of cases met with. Lymphangitis should be viewed rather as a complication than as a constant symptom. Bohn² was of opinion that each tumor was an inflammatory infarction, caused by embolism in the cutaneous vessels, but this observation has not been substantiated. He also regarded the affection as being closely allied to purpura rheumatica, and Kaposi to-day holds a like view. According to Schulthess's³ (of Zurich) analysis of cases with reference to the relations of erythema nodosum, erythema multiforme, and purpura rheumatica, it would seem that these three diseases possess many points of difference, especially as to the age of patients and the seasons of the year in which they occur. The resemblance to a hemorrhagic manifestation, suggestive of purpura, is sometimes marked, but in other cases it may be slight or may not exist at all. Profuse hemorrhage, when it occurs, may be viewed as a complication. Albuminuria and nephritis, without or with hemorrhage, may also occur. Curschmann⁴ found hemorrhagic nephritis in five or six cases out of twenty-five or thirty cases of the disease; but many other observers have not had this experience, especially as concerns hemorrhage.

NATURE OF THE DISEASE.

As to the nature of the disease, it may be said that it possesses much in common with erythema multiforme, and that in some cases at least it is due probably to the same causes. Of late years the opinion has gained ground that the disease is but an exaggerated form of erythema multiforme, but while this is true in some cases there are others in which it is not tenable. Clinical observation goes to show that the disease is seldom associated with the lesions of erythema multiforme, except in young children. I would call attention especially to the observation that the herpetic (grouped or creeping) elements so common in erythema multiforme are very seldom, if ever, met with in erythema

¹ Diseases of the Skin, vol. i. p. 291, New Syd. Soc. translation. London, 1868.

² Jahrbuch für Kinderheilkunde, Heft 4, 1868.

³ Correspondenz-Blat, der Schweizer Aerzte, xxv. Jahrg., Feb. 1, 1895.

⁴ Wiener Klin. Woehenschr., Nr. 45, 1889, p. 869.

nodosum. The relation of the disease to purpura rheumatica (peliosis rheumatica, peliosis Schoenleinii) seems sometimes to be closer than that to erythema multiforme.

That erythema nodosum is in most if not in all instances an infectious disease the author believes cannot be questioned. Some writers look upon it as being due to a specific infection, but this view is not in accordance with the observations which have been made. I believe it to be a general disease, with usually, but not necessarily, marked cutaneous symptoms. The often severe general character of the affection, the high, long-continued fever, the inflammation of the skin, and the involvement of the joints, sheaths of tendons, and serous membranes, are all significant, and are suggestive of other well-known infectious diseases, as, for example, influenza, various fevers, varicella, variola, and syphilis. Some peculiar atmospheric influence not infrequently seems to be the cause of the disease, as in erythema multiforme, herpes zoster, and some other diseases. It would seem that where the disease occurs in several members of a family the fact may be regarded as due to peculiar local or climatic condition, as in a record of cases reported by Gifford Nash,¹ where there occurred in one family within a period of ten months four cases of erythema nodosum. Knipe² has also reported three cases occurring simultaneously in one family. The supposed contagiousness of the disease (some writers holding it to be contagious) may, I believe, be accounted for in this way.

RELATION TO RHEUMATISM.

The relation of erythema nodosum to rheumatism is intimate, varied symptoms of the latter disease coexisting with the cutaneous manifestation in many instances. Stephen Mackenzie³ has collected valuable information on this point. From the tabulated notes of one hundred and eight cases of erythema nodosum collected from the records of St. Thomas's, Guy's, St. Bartholomew's, and the London Hospital, with especial reference to a combination with rheumatism, Mackenzie found that in thirteen cases acute and in four subacute rheumatism were recorded as coexisting with the erythema. In seventeen other cases joint-pains, apparently of a rheumatic character, were present. In three of these cases there was a history of previous rheumatism, in four evidence of heart disease, in two sore throat, and in two a family history of rheumatism. In ten cases a cardiac murmur without history of rheumatism existed, and in five other cases murmurs, apparently due to endocarditis, came on during the attack of erythema. A. E. Garrod⁴ also gives a table of twenty consecutive cases of erythema nodosum, in which

¹ Lancet, July 7, 1894.

² Brit. Med. Jour., 1882, vol. ii. p. 974.

³ Clin. Soc. Trans., xix. p. 215. London, 1886.

⁴ Treatise on Rheumatism and Rheumatoid Arthritis, p. 138. London, 1890.

in eleven cases there were histories of articular rheumatism or joint-pains. It may therefore be concluded that the disease is often associated with rheumatism or rheumatoid symptoms, and that heart disease may come on during an attack of the cutaneous manifestation with or without articular inflammation.

PATHOLOGICAL ANATOMY.

The disease shows a similar pathological anatomy to that of erythema multiforme: thus, Lewin¹ found in a case dilatation of the capillaries of the skin, and an infiltration of white and red corpuscles into the derma, the white corpuscles being more abundant in the subcutaneous cellular tissue. The bundles of connective tissue were infiltrated with granular cells, and the lymphatic vessels were filled with cells. Kaposi, on the other hand, holds the opinion that the disease depends upon a serous infiltration in all the tissues of the skin and in the cellular tissue with simultaneous capillary stasis, the node being of the nature of a wheal highly developed. Unna,² like Lewin and others, describes dilatation of the vessels of the corium and papillary layer, surrounded by closely packed cells, so that all sections of the larger blood-vessels appear in the form of thick strands of cells. Extravasations of blood, however, such as one might expect to find, considering the contusiform discoloration of the skin which occurs during the involution of the lesions, while they are doubtless sometimes present, are not usual. Unna states that he has not been able to demonstrate hemorrhage and in this way to account for the discoloration of the skin.

Diagnosis.—In the first place, it must not be mistaken for the result of external violence. The swellings at times, especially during the period of involution, bear a remarkably close resemblance to bruises, and where only two or three exist might readily be confounded with injuries of this kind. In such cases, in children, a medico-legal opinion might be required. The disease may simulate erysipelas, especially if it occur about the face, but may be distinguished from it by the presence of the nodular elevations and patches, by the absence of diffuse, peculiar, erysipelatous œdema, and by other symptoms. The lesions at times resemble threatening abscesses; but their previous history, number, situation, and course will always serve to characterize them. Syphilitic gummata should be excluded in the diagnosis. Phlebitis and lymphangitis must also be differentiated. The disease differs from urticaria tuberosa in that rheumatoid and articular pains are common, and that it is sometimes associated with rheumatic fever, whereas urticaria seldom has any connection with rheumatism; also in the color and in the location of the lesions, urticaria evincing no special predilection as to region. The nodes in erythema nodosum are tender or painful on pressure, whereas those of urticaria

¹ Quoted from Polotebnoff, *op. cit.*

² *Histopathologie der Hautkrankheiten*, p. 116. Berlin, 1894.

are œdematous and itchy. The course of the two diseases is different: in erythema each crop of nodes lasts from one to two or three weeks, whereas in urticaria they disappear within a few days at the longest. The lesions are, moreover, not to be confounded with acute circumscribed œdema, especially where the swellings in the latter disease are rosy or red.

The disease, especially when it pursues a slow or sluggish course, is to be distinguished from the rare disease designated "*érythème induré serofuleux*" of Bazin and other French writers, also described by Hutchinson and Crocker in England and by J. C. White in the United States. One of the most characteristic features of the disease is ulceration, and in this respect it also resembles a syphilitic gumma. It is not unlikely that some of the cases of "*chronic indurated erythema nodosum*" that have been from time to time described were really examples of the indurated erythema of the serofulous. The affection may be diagnosed from the papular and tubercular varieties of erythema multiforme by the presence of nodular elevations, often large, and by their deep-seated character. The lesions, it need scarcely be said, are also to be distinguished from non-erythematous rheumatic nodules, from which they differ in many particulars.

Treatment.—In mild cases no special treatment is called for, inasmuch as the complaint tends to end in spontaneous recovery. The febrile symptoms and the visceral complications, when the latter occur, may be combated by such remedies as are indicated. The bowels are generally constipated, and a saline purgative is useful. A simple diet should be ordered. The remedies referred to in considering erythema multiforme are those most valuable in this disease, especially salicin, the salicylates, salol, and salophen. In weakly females the tincture of chloride of iron may generally be given with benefit. Quinine, and phenacetin and acetanilid, are also useful, especially quinine. Rest and the recumbent position should always be enjoined. The cutaneous lesions may be treated locally by such remedies as diluted sulphurous acid; hyposulphite of sodium, from one-half to one drachm to the ounce; salicylate of sodium, twenty grains to the ounce; carbolic acid and lead water lotions; lead water and opium, and the like, applied warm or hot, as in the case of contusions. Strong or harsh remedies should never be employed. An ointment of ichthyol, from three to five per cent. strength, is well spoken of by Elliot.

Prognosis.—This is generally favorable. The disease seldom lasts longer than from three to five or six weeks, and in mild cases its course is shorter. Relapses and recurrences may happen, but they are rare.

PELLAGRA.

Syn., Erythema endemicum; Elephantiasis italica; Lombardian leprosy; *Lepra asturiensis*; *Fr.*, Pellagre; Mal de misère; *Ital.*, Mal rosso; Mal del sole; Risipola lombarda; Scorbuto alpino; Mal della miseria; *Sp.*, Mal de la rosa.

PELLAGRA IS AN ENDEMIC CONSTITUTIONAL DISEASE, CHARACTERIZED BY ERYTHEMATOUS CUTANEOUS INFLAMMATION, FOLLOWED BY DESQUAMATION, THICKENING, AND PIGMENTATION, TERMINATING IN ATROPHY, ACCOMPANIED WITH GASTRO-ENTERIC, CEREBRO-SPINAL, AND VARIED OTHER SYMPTOMS.

Symptoms.—It is characterized by general symptoms and a peculiar form of disease of the skin, affecting especially certain regions, particularly the backs of the hands and feet, in the form of an erythema or erythematous inflammation (ERYTHEMA PELLAGROSUM).¹ Three stages are generally recognized, which may be described as follows.

FIRST STAGE.—The disease usually begins in the spring or early summer, with precursory general symptoms of malaise, disinclination to work, weakness, and melancholy. Later the skin on the backs of the hands and feet, and on other parts exposed to the sun, becomes swollen, shining, and erythematous, the color at first being a sombre or scarlet red and afterwards a dark livid red, accompanied with burning but not itching sensations. The erythema, however, is not the only lesion: thus, sometimes vesicles and blebs form, and there may be slight hemorrhages. In some cases the epidermis becomes thickened, yellowish or brownish, without having been preceded by redness. The erythema often develops suddenly, within twenty-four hours, and generally continues in the acute stage from ten days to three weeks, when desquamation sets in.

Concerning the localization, it invades chiefly the backs of the hands and feet, and the front of the neck. Upon children and women it appears on the face, especially on the forehead, cheeks, and nose, but it is seldom seen here in men. According to Paul Raymond,² its distribution is very definite, being, as a rule, only on the back of the hand and not extending beyond the first interphalangeal articulation, and above not beyond the wrist, the forearm being only exceptionally affected. On the foot, only the upper half of the dorsum from the level of the malleoli is involved; and only the front of the neck down to the sternum is usually invaded, the back of the neck rarely being affected. From the peculiar localization of the erythema, on the backs of the hands and feet especially, it had long been considered settled that the sun, as in sun-burn (erythema solare), was the sole factor in its production, but such is not the case. It is conceded by competent observers (Raymond and others) that while the sun is incontestably necessary to the production

¹ The disease was first described in Spain by Gaspar Casal in 1750, with the name "mal de la rosa," about fifty years after the introduction into that country of maize from America. Frapolli, of Milan, in 1771, was the first to use the name Pellagra, derived from the Italian *pelle*, skin, and *aggra*, harsh.

² *Annales de Derm. et de Syph.*, 1889, p. 627.

of the disease, the erythema and its localization are not due to this cause alone. Neusser, in Roumania, found in entirely naked children of gypsies that the erythema was confined to the backs of the hands and feet, as in adults; and, as Raymond and others have noted, it manifests itself in those who wear stockings as well as in those who go barefooted. The erythema is due, therefore, to other, unknown causes, rather than to the sun. The cutaneous lesions, however, are distinctly aggravated by exposure to the hot sun. The injurious effect is due to the chemical (ultra-violet) rays rather than to the calorific (red) rays, as Charcot, Perroud, and especially Bouchard,¹ have shown.

When the desquamation, which is usually foliaceous, in the form of broad and thick, dirty-looking laminae, disappears, the skin shows pigmentation of a light or dark brown, "coffee and milk" color or of a bronze sepia tint, so that the coloration may simulate that of Addison's disease. The pigmentation and thickening of the skin increase after each attack for several years, when atrophic changes occur, the skin becoming dry, wrinkled, and withered, as in old age. Summarized, the changes in the skin may be said to consist of erythematous inflammation, followed by desquamation, thickening, and pigmentation, and terminating in atrophy. As winter approaches, these varied symptoms disappear, and the individual is apt to forget the disease until the next spring, when the same symptoms recur, usually in a more accentuated form.

SECOND STAGE.—As time goes on, the skin on the backs of the hands, face, and other parts of the body becomes browner, fissured, excoriated, and moist or dry and scaly. The lips become pale, and the tongue is red and fissured, with increased flow of saliva. Loss of appetite, thirst, and gastric and enteric symptoms manifest themselves, with nausea, indigestion, pains in the abdomen, and frequently diarrhœa. Debility, feverishness, and loss of weight, together with sleeplessness, sad and gloomy dreams, and vertigo, follow. Later, changes in the nervous system, pains in the head and spinal column, delirium, tremors, loss of muscular power, loss of memory, and marked melancholia are all common symptoms. It is said that there is a special tendency to suicide by drowning, and even a desire to touch and feel water.

THIRD STAGE.—This may be regarded as an aggravation of the second stage, but the symptoms are more positive, delirium and mania, the so-called "mania pellagrosa," often being present. In some cases, according to Neusser (who studied the disease in Friuli, in Southern Austria near Italy, at the instance of the Austrian government, in 1887), the cutaneous symptoms may not occur until the latest stage, constituting "*pellagra sine pellagra*."² The disease pursues a variable course. It

¹ Expériences relatives à la production de l'érythème solaire et plus particulièrement de l'érythème pellagreu. Comptes Rendus de la Soc. de Biol., 1877, p. 253.

² Quoted from Kaposi, The Pathology and Treatment of Diseases of the Skin, translated by James C. Johnston. New York, 1895.

may continue for ten or fifteen years, and sometimes terminates fatally in a few years. The average duration is five years.

Etiology.—The disease has been carefully studied by Hardy,¹ of Paris, who makes some interesting observations concerning it. Kluczenko,² of Bukovina, has described it as occurring in that district, and Paul Ragoud,³ of Paris, as it is met with in the Tyrol. One of the more recent articles descriptive of the disease is that of Berger,⁴ to whom the author is indebted for several observations.⁵ It usually attacks persons between thirty and fifty years of age, and more frequently women than men. It is not regarded as being hereditary, and is not contagious. As is well known, the urban population of pellagrous districts enjoys immunity in spite of constant intercourse with the affected. It is a disease of the peasants and poorest classes, occurring especially in those following agricultural pursuits. It has well been called the "disease of misery" ("mal della miseria," "mal de misère"), on account of its moral as well as its physical effects. All races and all nationalities are liable to its invasion.

It is met with in Spain, Portugal, France, Italy, Roumania, Moldavia, Wallachia, the island of Corfu, the Austrian Tyrol, and sporadically in Algiers and in Mexico. In Italy in 1879 there were reported to be 97,855 cases, and in 1881, 103,958 cases.⁶ In Roumania, out of a population of 6,500,000 Neagoe places the number at 38,000; while in 1888 in the district of Gradisea, Austria, on the Italian frontier, the field of Berger's observations, there were 790 cases out of a population of 65,788. It occurs in warm climates, between latitudes 42° and 47° north, and appears endemically especially where maize is grown and used; but, as is well known, it may also show itself sporadically in subjects who have never used maize and who have never visited pellagrous countries, as Hardy has pointed out in connection with cases observed in Paris. It may be further remarked that the peasants of Southern Italy, though large consumers of maize, are entirely exempt from its invasion. Scheiber and Kaposi⁷ also have seen cases in individuals who had never eaten maize, but had lived like those in the upper walks of life in cities; some of the cases, moreover, had never worked in the sun: so that it may be said the etiology of the disease remains unsettled. Hardy is of opinion that destitution, alcoholic excess, and the use of maize, together with a

¹ *Gaz. des Hôp.*, Aug. 31, 1882; abstract in *Jour. Cut. and Ven. Dis.*, 1882-3, p. 124.

² *Brit. Jour. of Derm.*, vol. i. p. 240.

³ *Monatsh. f. prak. Derm.*, Bd. ix., 1889, p. 576.

⁴ *Wiener Klinik*, Wien, 1890, Heft 6; abstract in "Selected Monographs on Dermatology," New Syd. Soc., London, 1893.

⁵ Pellagra is exhaustively treated (with full bibliography) by Jules Arnould in *Diet. Encyc. des Sciences Méd.*, 2me sér., tome xxii., Paris, 1886. See, also, the valuable monograph "Recherches Nouvelles sur la Pellagre," by Bouchard, Paris, 1862; and "Traité de la Pellagre et des pseudo-pellagres," by Th. Roussel, Paris, 1866.

⁶ Berger, *loc. cit.*

⁷ *Op. cit.*

hot climate, may all have a share in producing the disease. It seems probable to the author that the disease is capable of being produced by varied factors, of which maize may be regarded as the commonest.

There exists a condition simulating pellagra, called by Roussel¹ "pseudo-pellagra," in which many of the symptoms of the true disease are present, and which occurs in chronic alcoholism with peripheral neuritis. In a case of this disease Déjerine² found neuritis parenchymatosa of the nerves of the skin on the back of the hand.

Pathology.—It is generally conceded by those who have studied the disease that it is one involving the nerve-centres, pursuing a slow course, characterized by peculiar psychic, sensory, motor, and trophic symptoms, followed and accompanied by gastro-enteric disturbance and progressive destruction of the organism.

The pathological anatomy shows the existence of hyperæmic and exudative processes with inflammation, followed by hypertrophy, as regards not only the integument, but also various internal organs. Atrophy of the skin, with sclerosis of the vessels and papillæ of the corium, and fatty degeneration of the internal organs, follow, and also pigmentary changes. According to the observations of Lombroso, A. Verga, and others, autopsies often show atrophy of the cortical substance of the brain, œdema of the brain, superficial softening of the cerebellum, infection of the spinal meninges, and softening of the spinal cord. Paltauf and Heider³ investigated the maize of affected countries bacteriologically, and concluded that the disease is not parasitic. The organism found belonged to the same genus as the potato bacillus. They believe that it is a chronic toxic disease due to the products of diseased maize, which may be extracted by alcohol. The disease bears a close resemblance to acrodermia (known also as "epidemic erythema") and to ergotism. Sporadic cases are occasionally met with in places at a great distance, and the diagnosis may be obscure, and to be reached largely by exclusion. S. Sherwell,⁴ who observed a case occurring in a Genoese sailor in New York, states that the diagnosis at first was difficult. It resembled erythematous eczema, especially of the face, with some exceptional features, absence of itching being notable. The eruption was general, and later gangrene of the extremities set in, followed by death in a few months from exhaustion.

Treatment.—Dietetic regimen constitutes the most important treatment. Almost all observers in pellagrous countries agree that only from complete abstinence from maize, especially that which has been damaged by the sea, can a favorable result be looked for. Arsenic is one of the best remedies. Lombroso considers it valuable, and states that very

¹ *Traité de la Pellagre et des pseudo-pellagres.* Paris, 1866.

² *Annales de Derm. et de Syph.*, 1881, p. 719.

³ Quoted from Berger, *loc. cit.*

⁴ *Jour. Cut. and Ven. Dis.*, vol. i., 1882-3, p. 142.

favorable results may be obtained from it even without any change in the habits and diet of the patient. According to Kluczenko, iron is also useful. Warm sulphur baths are regarded as being particularly beneficial.

ACRODYNIA.

Affections of an erythematous character, occurring in epidemics, have been described from time to time under various titles, especially ACRODYNIA,¹ or ERYTHEMA EPIDEMICUM, which occurred first in Paris and its suburbs in 1828 to 1830 and in 1831,² when it attacked nearly forty thousand persons, and in one French regiment in 1874 in Versailles. It has been observed in Belgium, in 1844 and 1845, in the French army in Constantinople, in 1854,³ and in the army in Mexico, in 1866. It is characterized by marked, but varied, symptoms of the nervous system, which are almost always constant, including cramps, spasms, and tetanic contractures. In all cases digestive disturbance, and vomiting and diarrhœa, are present. Injection of the conjunctiva, and œdema of the face or limbs, also occur. Hyperæsthesia, pricking or shooting pains, and burning in the palms and soles, especially the latter, and sometimes anæsthesia, are present. There is no special fever, and the disease is seldom fatal, except in the old and feeble, recovery taking place in a few weeks or months. Early in the course of the disease an erythema manifests itself, chiefly on the hands and feet, especially the palms and soles, but also on the limbs and body, followed by desquamation or exfoliation and brownish or blackish pigmentation, particularly upon the trunk. The pathology is obscure, but in autopsies both Tosquinet and Camberlin found in several cases undoubted inflammation of the pia mater and spinal arachnoid. The disease in many particulars bears a close resemblance to pellagra. It may be noted, however, that whereas in pellagra the backs of the hands and feet are attacked, it is the palms and soles that suffer in acrodynia. Both the general and the cutaneous symptoms are more varied in the latter disease than in pellagra. The disease was regarded by Chomel, Récamier, and others in Paris as being due to spoiled grain. There exists a strong resemblance between the nervous and cutaneous symptoms of acrodynia and those produced by chronic arsenical intoxication, as Marquez⁴ has pointed out. Some epidemics are mild, others severe. In Belgium, ecchymoses, cyanoses, and even gangrene were noted. The treatment of most service, it is said, consists in counter-irritation to the spine.

¹ The word is derived from *ἄκρα*, the extremities, and *ὀδύνη*, pain, and was proposed by Chardon during the Paris epidemic, prior to which the disease had been known as "mal des pieds et des mains," "chiropodalgie," "phlegmasie gastro-cutanée aiguë multiforme," and "érythème épidémique." The latter name was given by Alibert.

² Alibert, *Monographie des Dermatoses*, Paris, 1833, p. 12. See, also, Hirsch, *Geographical and Historical Pathology*, vol. ii., London, 1883.

³ Tholozan, *Gaz. Méd. de Paris*, 1861, who reported twenty cases.

⁴ *Gaz. hebdomadaire*, Fév. 1889, p. 91.

URTICARIA.

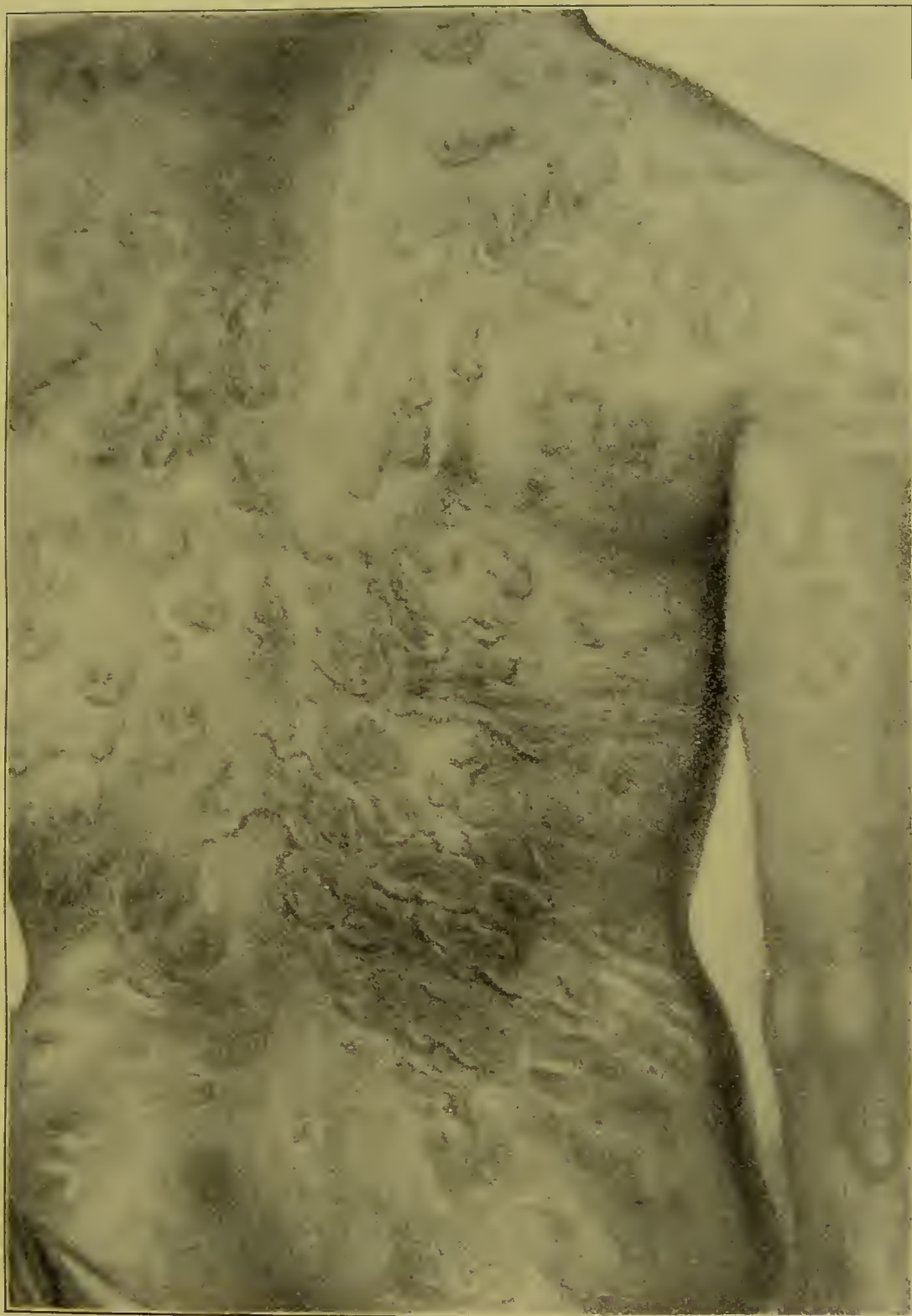
Syn., Nettle-rash; Hives; Febris urticata; Cnidosi; *Germ.*, Nesselausschlag; *Fr.*, Urticaire.

URTICARIA IS AN ŒDEMATOUS AFFECTION, CHARACTERIZED BY THE DEVELOPMENT OF WHEELS, OF A WHITISH, PINKISH, OR REDDISH COLOR, DISCRETE, CONFLUENT, OR IN VARIOUSLY SIZED AND SHAPED PATCHES, ACCOMPANIED BY STINGING, PRICKING, TINGLING SENSATIONS.

Symptoms.—The disease shows itself by the usually sudden formation of wheals of variable size, shape, and color. They vary greatly as to size, at times being no larger than a small split pea, while in other instances they are spread out diffusely and may occupy extensive tracts; as ordinarily met with, when typical, they are pea or small bean and finger-nail sized. They may occur as circumscribed, isolated efflorescences, or in the form of patches, caused by a number of the lesions having coalesced. It may be said that all large patches are formed in this manner. They vary exceedingly as to shape; they are mostly ovoid or roundish, but may exist in varied forms. Lines, irregular streaks, crescents, and irregularly shaped patches, may all exist, and where such lesions run together odd configurations usually occur (URTICARIA GYRATA *seu* FIGURATA). Wheals appear either as slight elevations, usually like mosquito-bites, but often flat or diffusely spread out, barely perceptible above the level of the skin, or as prominences raised a line or more above the surrounding skin. To the touch they may be soft or firm, ill defined or circumscribed, sometimes sharply so. In color they are whitish, pinkish, or reddish, and at times are mottled, variegated, or streaked. They are generally surrounded by more or less areolar congestion, in which case the wheals are usually white (URTICARIA PORCELLANEA), whitish, or mottled, with a rose-red or a darker red zone around them. No trace follows their disappearance, except occasionally slight or marked yellowish or brownish pigmentation. In rare cases of this kind, without permanent lesions, the pigmentation may be marked. Such cases, however, do not come within the definition accorded to the quite different disease designated urticaria pigmentosa. They should be classed rather as urticaria followed by pigmentation. Wallace Beatty¹ records three cases of chronic urticaria, the lesions consisting of extremely itchy papules, which were followed by ringed pigmentation. The author has met with only a few cases in which distinct pigmentation succeeded the wheals, and regards the occurrence as rare.

The subjective symptoms consist of burning, tingling, stinging sensations, like the sting of the nettle, which may be merely annoying, or, on the other hand, distressing, in almost all cases the latter. The patient rubs and scratches the skin, which, though it in part relieves the dis-

¹ Brit. Jour. of Derm., 1891, p. 136.



URTICARIA.

VARIETY PERSTANS.

The subject was a robust, healthy man aged forty. Rheumatic pains in the joints, especially the knees, preceded the urticaria. He had been confined to bed for two weeks when the wheals first appeared about the knees and then over the general surface. The latter lasted for several hours, then gradually subsided in one place and appeared in another. Duration two years, during which period there existed general ill health, with gastric and intestinal symptoms. Erysipelas manifested itself on the face, and spread rapidly over the scalp; delirium and coma, and death within one week from the beginning of the erysipelas. (After ERASMUS WILSON, *Portraits of Diseases of the Skin.*)

agreeable sensations, always causes more of the efflorescence to appear. In some instances the itching and burning are more distressing before the wheals appear than when they are developed.

As ordinarily encountered, it is the most fugitive and ephemeral of cutaneous diseases. Its advent is usually sudden, a few minutes not infrequently sufficing for its development; it may remain upon the surface for but a short period, or for an hour or two or considerably longer. Even while the eruption is out, individual wheals are generally extremely fugacious in their character, often coming and going, flying about, as it were, in an irregular manner (*URTICARIA EVANIDA*). The disease frequently leaves one portion of the body to show itself in another and even a remote part; it may also repeatedly change its location, shifting its seat from time to time, and without apparent cause.

In this connection Jacquet's¹ experiments on the production of the wheal of urticaria are interesting as showing how impressionable the eruption is to external influences. If the leg of a person with generalized urticaria be hermetically protected, the itching and wheals are suddenly and absolutely arrested on that part, the rest of the body remaining unaffected.

All regions of the body, including the scalp and the mucous membrane, are liable to be attacked. It has no special regions of predilection, but is especially apt to occur upon those parts which are subject to pressure from the contact of the clothing. A small area only or the greater part of the surface may be invaded. It occurs at all periods of life, and attacks both sexes. Children are particularly subject to it. It is ordinarily an acute disorder, lasting but a few hours or it may be days, during which time frequent exacerbations may take place. Its duration depends upon the presence or the removal of the exciting cause. It may also occur as a chronic affection, the relapses taking place with such frequency, and extending over so long a period, as to warrant the use of this term. In some cases the disease may last for years (*URTICATIO*), generally in the form of relapses or frequent recurrences (*URTICARIA RECIDIVANS seu RECURRENS*). Where the lesions having formed incline to persist instead of disappearing in the usual manner, the condition is designated *URTICARIA PERSTANS*. This variety of lesion is not to be confounded with chronic urticaria, where the disease rather than the individual lesions pursues a chronic course. The disease by no means always occurs in a typical form. On the contrary, many atypical examples are met with, and the diseases in which "urticarial complications" may occur are numerous, including the herpetic and herpetiform affections, purpura, and the polymorphous erythemata.

The occurrence of urticaria upon the mucous membranes must be admitted. It takes the form of an œdema, usually diffuse. The first

¹ *Annales de Derm. et de Syph.*, 2e sér. t. ix., 1888.

signs of urticaria in some instances, as is well known, are manifested in connection with the alimentary or the respiratory tract, as evidenced by symptoms of swelling, characterized by nausea and gastric and œsophageal crises, or a sense of suffocation, and other signs of distress. All such symptoms are peculiar in that they are usually sudden, evanescent, or ephemeral.

URTICARIA FACTITIA, DERMATOGRAPHISM.

In some cases there exists such an extreme state of excitation of the nervous apparatus supplying and governing the skin that wheals may be provoked by any local irritation, as scratching or even the contact of the clothing. The eruption is in one sense factitious (URTICARIA FACTITIA), the exciting or provoking causes being local, the lesions taking on the form of the factor which has provoked them: thus, with the fingers or a blunt or sharp instrument all manner of lines, figures, and designs in wheal-form may be produced, which remain on the skin a variable period, it may be minutes or hours.

In another class of cases, chiefly arthritic, nervous, and hysterical persons, in almost all instances with hyperæsthesia, a similar state of the skin is encountered, but the behavior of the manifestation is somewhat different, being more readily produced, intense, often without itching, persistent, and chronic, in some cases lasting many years. Dujardin-Beaumetz,¹ Mesnet,² Chatelain,³ and especially T. Barthélemy,⁴ have directed attention to this form with the titles DERMATOGRAPHISM, DERMATOGRAPHIA, DERMATOGRAPHIC PSEUDO-URTICARIA, and AUTOGRAPHISM, and the latter observer has described a case (Beaumetz's) in which the skin was at the same time anæsthetic. In most instances, as stated, the condition is constantly present, and is not an ephemeral or transitory affection, thus differing from urticaria, with which it is generally confounded by writers. The subject remains to be referred to more at length elsewhere.

There are several varieties of urticaria which call for particular description.

ACUTE URTICARIA.—According to the cause and the gravity of the attack will the eruption make its appearance in one way or another. It is usually ushered in with slight febrile symptoms, accompanied by languor, headache, depression, gastric derangement, furred tongue, and other signs of systemic disturbance. Sometimes febrile symptoms are marked (URTICARIA FEBRILIS). The efflorescence appears suddenly, so that in some cases in an hour's time the whole body may be more or less

¹ Bull. et Mém. de la Soc. Méd. des Hôp. de Paris, 1879, t. xvi. p. 197.

² Brit. Jour. of Derm., May, 1890.

³ Précis Iconographique des Maladies de la Peau. Paris, 1893.

⁴ Étude sur le Dermographisme ou Dermoneurose Toxivasomotrice. Paris, 1893. This is a valuable and exhaustive work, and contains the notes of many cases and a complete bibliography.

invaded. In other cases only a portion of the body, as the face, the trunk, or the limbs, is involved. The wheals are remarkable for their capricious nature. They appear and disappear many times in the course of the attack, but do not, in preference, return upon former sites. About the head they have a tendency to show themselves upon the forehead, ears, and eyelids, producing considerable swelling and disfigurement. They usually occur isolated here, and do not incline to run together to the same extent as upon the trunk; in the latter region large, solid patches of wheals, the size of the palm or even much larger, are not uncommon. The burning and stinging sensations are in these cases often intense and almost intolerable. In a variable time, from an hour to a day, the symptoms begin to subside; new wheals cease to appear, and the efflorescence by degrees fades away until no traces of it remain. The termination of the attack is greatly influenced by the removal of the exciting cause, and by active treatment. Not infrequently in severe cases the disease takes on a more congestive form (*URTICARIA CONGESTIVA*), when typical wheals do not form, the eruption assuming, it may be, a diffuse erythematous or a morbilliform, scarlatiniform, or, more frequently, an erythema multiforme-like character.

CHRONIC URTICARIA.—Here the condition, viewed as a whole, is of a chronic nature, and continues, it may be, for months or years, or, indeed, as long as the cause may exist. The individual wheals incline to come and go in the same evanescent manner as in the acute form, but the patient is rarely entirely free from them. No sooner has one crop disappeared than another starts up, the skin sometimes being much, at other times but little, invaded by the efflorescence. In other cases the eruption is regularly or irregularly intermittent. At times the wheals are persistent, and last for many hours or, in rare instances, even for a day or two. The symptoms of general disturbance, so prominent in many cases of acute urticaria, are usually wanting, the individual often seeming to be in average general health.

URTICARIA PAPULOSA.—This is a variety of the disease which, on account of its peculiar character, calls for special remark. It is also known as *LICHEN URTICATUS*, and was first so designated by Willan and Bateman. The lesion possesses the form of a papule with some of the characters of a wheal. Inflammatory changes coexist with the serous exudation or supervene, giving rise to a mixed lesion, partaking more of the nature of a papule than of a wheal. It is observed particularly in young children, and shows itself as pin-head or small split-pea sized, flat or acuminate papules, which appear, as a rule, suddenly, and, after continuing hours or days, disappear slowly. But not infrequently instead of passing away they assume a chronic form, and moreover are liable to varied modifications. They usually occur in a dispersed manner over the body, especially on the loins and buttocks, and are rarely seen in great numbers. They are attended with much itching, especially

at night. Sometimes typical wheals are noted, but they are for the most part small, rounded, and pinkish; in most cases they are not recognizable as wheals. Owing to the scratching of the patient, their summits are usually more or less wounded and covered with little blood crusts, the original lesions being thus masked. The children in whom this form of urticaria appears are, as a rule, badly cared for and improperly nourished; but it may also occur in the upper walks of life, although it is usually less persistent and more amenable to treatment. It is an obstinate disease, and is worse in summer than in winter. In Philadelphia this form of the disease is comparatively rare, but in London many such cases are met with in dispensary and hospital practice, where the author many years ago first became familiar with its peculiar features. T. Colcott Fox¹ has described the disease as it is met with in London, and it may be remarked that our knowledge of it is largely due to English dermatologists. It is to be distinguished from scabies, and is not to be confounded with the lesions resulting from flea- and bed-bug-bites, nor with the prurigo of Hebra. At the same time it must be said that in some particulars it bears considerable resemblance to Hebra's prurigo. It is a neurosis, and as regards the lesions is somewhat complex: thus, Fox states that sometimes vesicles or even pustules may be present in addition to the papules. Irritation of the alimentary canal must be regarded as a prominent factor of the disease. As a rule, it is more amenable to internal than to local treatment, although some English authorities do not subscribe to this view. Fox is of the opinion that this disease is the same as Hutchinson's "varicella-prurigo," the "infantile prurigo" of some English writers, and certain ill-defined papular, vesicular, and pustular eruptions following vaccination. The resemblance between some cases of lichen urticatus and the prurigo of Hebra, as remarked, may be striking. In England it would seem to take the place of the Austrian prurigo, which, as in the United States, is there only occasionally met with.

UNUSUAL FORMS AND COMPLICATIONS.

Urticaria, existing as a complication, not infrequently occurs in the course of other diseases. It is necessary, therefore, to distinguish those cases in which it is the sole disorder and those where it exists as a complication or as a secondary affection. It is met with sometimes so conspicuously in several diseases, and often plays so active a part, as quite to overshadow the primary lesion. Purpura is sometimes associated with wheals, a mixed lesion resulting, part hemorrhage and part wheal, the presence of the hemorrhage being, it may be, partially obscured. The urticarial element, however, is usually secondary. This occurrence has given rise to the terms *URTICARIA HÆMORRHAGICA* and *PURPURA URTICANS* or *URTICATA*. A disposition to the formation of blebs is now

¹ Brit. Jour. of Derm., May and June, 1890.

and then observed in connection with urticaria, producing an eruption partaking of the nature of both blebs and wheals. When this occurs, the wheals usually form first, but are displaced by blebs, which may assume the characteristics of the lesions of pemphigus. This peculiar and rare combination of symptoms has given rise to the term *URTICARIA BULLOSA*, of which I have seen several marked cases. Renault¹ has described an hysterical "gangrenous urticaria," but this form may more appropriately perhaps be regarded as a dermatitis gangrænosa.

Occasionally large, walnut or even egg sized, firm, flesh-colored or reddish, more or less persistent, soft or firm, nodes or tumors are formed, in some instances resembling somewhat in appearance exaggerated lesions of erythema nodosum, constituting what has been termed *URTICARIA TUBEROSA*. Inasmuch as in many of these cases the subjective symptoms especially are not those characteristic of urticaria, I am inclined to regard most of them rather as forms of acute circumscribed œdema, which is a closely allied but a different affection. The lesions are usually few in number, are more persistent than in the ordinary forms of the disease, and occur for the most part in middle-aged persons in poor health. This form of disease was first described by Milton in 1856, and later in his work on Diseases of the Skin.² Juler³ also reported a case, and Crocker⁴ states that he has met with three cases, in one of which, a man aged forty-four, a broken-down publican, the swellings were as large as a goose's egg; he was also subject to diffuse swelling occupying nearly the whole anterior surface of the thighs. But most of such cases, especially those in which the characteristics of the wheal are ill defined or wanting, in the author's opinion are more appropriately placed with acute circumscribed œdema. Itching and burning are generally absent or are not marked in such cases because the subcutaneous tissue rather than the corium is mainly involved.

As illustrating tuberoses, or "giant," urticaria, occupying a place, or forming a connecting link, between urticaria and acute circumscribed œdema, the following rare case, reported by Kenwood,⁵ may be referred to. The lesions consisted of wheals, some of which were six inches in diameter, which occurred anywhere about the body. The affected area suddenly assumed a red blush, with tingling pain, the central portion rising and becoming blanched and surrounded with a red zone. The swellings lasted in bad attacks two days, and disappeared without trace. They generally appeared after violent chills, to which the woman had for many years been subject. There was a history of rheumatism, and

¹ *La Médecine Moderne*, Fév. 20, 1890.

² London, 1872. In a monograph, with the title *Urticaria Gigans*, or *Giant Urticaria*, the same author gives two additional cases, accompanied by a colored portrait. London, 1878.

³ *Cincinnati Lancet and Observer*, January, 1878.

⁴ *Op. cit.*, p. 123.

⁵ *Lancet*, Jan. 9, 1892, p. 84.

the eruption was probably benefited by a mixture of salicylate of sodium and iodide of potassium.

Etiology.—The causes of urticaria are numerous and of a very diverse nature. Certain external irritants and poisons to the skin are capable of producing the eruption in a marked degree: thus, the stinging nettle (*URTICA DIOICA* or *URENS*), the jelly-fish, certain hairy caterpillars, the common flea, the bedbug, the mosquito, flies, and bees, are all not infrequent causes. The more sensitive the skin the greater will be the disturbance when such agents are brought into contact with it.

Among the internal causes, gastric and intestinal derangements are by far the most common; and they may be looked upon as productive of the majority of acute urticarias, especially in children. Thus, an overloaded stomach, excess in wine, or highly seasoned food, may, as is well known, occasion an attack; while certain articles of food, as fish, oysters, clams, crabs, shrimps, lobsters, veal, pork,—especially sausage,—oatmeal, mushrooms, pickles, raspberries, gooseberries, strawberries, cucumbers, melons, and nuts, may all play a conspicuous part in calling forth the affection (*URTICARIA AB INGESTIS*). But in many cases these and other articles of food do not act as irritants to the gastro-intestinal tract, but rather as poisons or toxins, after they have been absorbed. Sometimes they do not develop the cutaneous affection until from six to ten hours have elapsed after ingestion. A. Pick¹ relates a case in which he was able to prevent the appearance of an urticaria which always followed the use of potatoes and preserved fruit by the administration of small doses of creosote. Any form of irritation in the bowel may give rise to the affection, as, for example, intestinal worms, especially in children. Even the rupture of hydatid cysts may give rise to an urticarial eruption, as in a case reported by Debove.² Some poison is probably produced in the fluid, which is taken into the system in cases of this kind. A number of medicinal substances, taken internally, may likewise occasion urticarial forms of disease; of these, copaiba, cubebs, turpentine, valerian, oil of sandalwood, antipyrin and the like, chloral, salicylic acid, salicylate of sodium, iodide of potassium, and quinine may be mentioned.³ It will be understood that in many cases in which the eruption is produced by the ingestion of any of the above enumerated articles a more or less pronounced idiosyncrasy may exist. Thus, I have known of two cases in which cow's milk invariably produced the disease, and some persons are unable to partake of red meat for the same reason.

Mental emotion, sometimes even slight, occasionally is sufficient to call forth the efflorescence, as in a case reported by Alibert,⁴ occurring

¹ Wiener Med. Presse, 1893, Nr. 31.

² Le Progrès Médical, Dec. 31, 1887.

³ For additional information see *Dermatitis Medicamentosa*.

⁴ Quoted from McCall Anderson's *Treatise on Diseases of the Skin*, Philadelphia, 1887, p. 238.

in a young woman who could not enter a drawing-room without having the whole skin covered with urticarial wheals, so much so that she could not dance or enjoy any other recreation; also the case of a poor woman who for sixteen years was the victim of this affection to such an extent that she could not speak without the whole body being covered with wheals. Sudden emotional or unusual excitement, in some individuals, may be sufficient to bring it out. Such psychical causes as grief, fright, anger, and the like, may also cause the disease to appear. Thus, Stampacchia¹ gives a case connected with manifold nervous disturbances, which led to anæsthesia of the left lower extremity, all the symptoms being caused by deep grief. The varied forms of urticaria and urticarial disease met with in recently arrived immigrants in seaports are generally neurotic in nature; but in other cases they are due to diet, especially too much nitrogenous food, as Bronson, of New York, has pointed out.

In females, menstrual and uterine difficulties, pregnancy and lactation, and organic disease of the uterus and appendages may all give rise to the affection. The frequent association of urticaria with uterine disorders was first pointed out by F. Hebra and by Scanzoni; and it is well known that in some women the introduction of a sound into the uterus will give rise to an attack of urticaria. Lawson Tait² has reported a number of cases in which urticaria appeared after abdominal section.

Malaria may likewise be viewed as one of the causes of urticaria, especially of the chronic form. The subject of malarial urticaria has received considerable attention, particularly in Europe. Christiani's³ observations made in the Tuscan Maremma, a region with a notably evil repute for malarial disease, go to show that the eruption comes out at the beginning of the second, or hot stage, and disappears during the third stage with the advent of free sweating. In Christiani's article references will be found to papers on the subject by Frank, of Pavia, one of the first to describe this form of urticaria, Griesinger, Cantani, Strümpell, Dieulafoy, Neumann, Hebra, Carpani, Niemeyer, and others. In this country L. P. Yandell,⁴ of Louisville, was one of the first dermatologists to direct attention to the importance of recognizing malaria as one of its causes. H. C. Wood⁵ has seen a furious urticaria replace the chill-stage of a malarial paroxysm.

The disease is intimately associated with the nervous system. It is often noted in connection with various nervous states, as irritation or disease of the nervous centres, neuralgia, asthma, hay fever, and albuminuria. Charcot reports a case of locomotor ataxia in which enormous

¹ *Annales de Derm. et de Syph.*, 1881, p. 150.

² Quoted by Geo. H. Rohé in his article "Skin Diseases and Sexual Disorders." *Trans. of the Amer. Assoc. of Obstet. and Gyn.*, vol. i. (1888) p. 266.

³ *Lond. Med. Record*, Nov. 20, 1888, from *Lo Sperimentale*, June, 1888.

⁴ *American Practitioner*, Louisville, 1878, xvii.

⁵ *Nervous Diseases and their Diagnosis*, by H. C. Wood, Phila., 1887, p. 223.

wheals covered the parts through which the pains were darting. The relation of rheumatism, and especially of rheumatoid arthritis, to urticaria is not generally admitted by writers, but in some cases there can be no doubt that it is close. The association of acute circumscribed œdema with rheumatoid arthritis is even closer. There is also at times a close relationship between it and such general diseases as purpura. In some cases of chronic urticaria the urine, though normal in quantity, is found to be of low specific gravity, and to contain much less than the usual amount of urea and uric acid. The same condition is sometimes noted in other diseases in which the central nervous system is implicated, as I have observed in scleroderma. It is sometimes dependent on the gouty or lithæmic state. According to Dyce Duckworth,¹ it may precede by longer or shorter periods a paroxysmal attack of gout, and in the same patient either gout or urticaria may occur after errors of diet, uric acid being probably the direct excitant, acting as bile or other irritants do in inducing this disease. Jarüsoff² records a case in which the hypodermic injection of corrosive sublimate invariably produced an attack of urticaria ten or twelve hours after the injection, although no local irritation occurred.

The causes of chronic urticaria are usually obscure; sometimes they may be found in affections of the cord or in organic disease of certain organs, as, for example, the uterus, liver, or kidney. Sometimes the causes when detected are so slight as to be scarcely reconcilable with the amount of local disorder. Recurrences of urticarial eruptions in several members of the same family without ascertainable cause are occasionally observed; and in this particular the disease resembles acute circumscribed œdema. Mode of life, habit, exercise, diet, and change of air are all known in some cases to exert an influence over the affection.

Pathology.—A wheal is a more or less firm elevation, consisting of a circumscribed collection of fluid material which has been suddenly exuded into the papillary layer and corium. It is a peculiar form of circumscribed œdema. The process is an acute, angioneurotic one, having its seat in the derma. In some cases the subcutaneous tissue is also more or less involved. While the œdema is circumscribed, it nevertheless tends to spread, and in particular to coalesce, large areas being thus invaded.

We may distinguish between the wheal produced by the stinging nettle (*URTICARIA TRAUMATICA*) and that produced by varied internal causes. Neumann³ excised and examined with the microscope wheals which had been excited by the sting of the nettle upon rabbits. The condition found was that of marked œdema of the tissues, with a diminution in the supply of blood. Unna⁴ experimented upon excised

¹ Treatise on Gout. London, 1889.

² Brit. Jour. of Derm., vol. iii. p. 99. Other cases are also cited by the reporter.

³ Hand-Book of Skin Diseases, p. 135. Amer. ed., New York, 1872.

⁴ Centralblatt für Klin. Med., Nov. 6, 1887.



URTICARIA.

VULGARIS, OR COMMON VARIETY.

The section represents a wheal which was produced artificially by drawing down the finger-nail over the skin on the bend of the elbow. The wheal was excised about ten minutes later. The patient was a middle-aged white man who had had urticaria factitia for many weeks. The epidermis (E) was practically unaltered, but the whole corium (C) was the seat of acute inflammatory changes. The blood-vessels (V) were widely dilated, and contained and were surrounded by large numbers of polynuclear leucocytes. The vessels which accompanied the sweat-ducts (S) appeared to be more affected than the other vessels of the corium. The lymphatic vessels (L) were also widely dilated, and the juice-spaces likewise were much enlarged, but they all contained only granular material and no cells. Large numbers of polynuclear cells (shaped like a horseshoe in the drawing) had wandered widely from the blood-vessels, and so were found to pervade the whole region, even into the papillæ, but only a few had made their way into the epidermis. Many of the polynuclear cells showed various stages of marked disintegration. The whole corium was also much swollen and infiltrated with serous exudation. Small quantities of fibrin were found especially near the most dilated vessels (*e.g.*, at *r*). Some of the connective-tissue cells of the papillæ were œdematous. Numerous mast-cells (M) were scattered throughout the corium, and were perhaps more numerous than normal. These observations have been confirmed after the excision of artificial wheals in seven other cases of urticaria factitia, but the amount of inflammation present varies, of course, according to the intensity of the disease. The results were practically the same in a spontaneous wheal which was also excised. Magnified about 35 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)

wheals produced by nettles upon himself, and found that migratory cells are not present, and that therefore they cannot be concerned in the formation of the wheal. The condition is a spastic œdema of the acutest form. It concerns almost solely the lymph-vessels, which are enormously dilated. There also exists stasis of blood in the large veins, which causes compression of the blood capillaries, resulting in localized anæmia of the central portion of the wheal. Symptoms of inflammation are absent, especially leucocytes (Unna¹).

In a wheal of common urticaria the corium is distended with slightly inflammatory serum (as in some other œdemas), the process being accompanied by vaso-motor disturbance, in the form of a perversion of innervation of the vaso-motors. The œdema of a wheal is peculiar, first in that it is elastic and resists pressure from without, and is therefore not like the swelling of dropsy; and, secondly, in that it is not plastic. The lymph-spaces near the large vessels in the deeper strata of the derma are found to be dilated. There exists marked stasis of the lymph circulation, and paresis of all the blood-vessels, arterial as well as venous. The circulation in a wheal is always seriously interfered with, the blood being driven from the centre to the periphery, producing the characteristic whitish centre and red areola. The congestion surrounding a wheal is easier to account for than the whitish central portion of the lesion which is deprived of blood. The latter, however, is probably due to spastic contraction of the capillaries and to venous stasis, as Unna states is the case in connection with the pathology of the wheal from a nettle. What part the nerves, and what part the muscular fibres, of the skin take in the production of wheals cannot be definitely stated. There can be no doubt, however, that the nerves play by far the more important part in their formation, and that the vaso-motor system in particular is concerned in their production. The process is a typical angio-neurosis. In the subjects of urticaria there must exist as a primary cause a certain peculiar irritable or irritated state of the nervous centres governing the vaso-motors, which predisposes to the occurrence of the cutaneous manifestation. Whether this irritation has its origin in the centres or is reflex, it is often difficult to determine.

Vidal² found in sections of skin affected with urticaria the superficial and deep vessels of the corium dilated and filled with blood, without alteration of the vascular walls. Both the blood-vessels and the lymphatics were surrounded by a large number of leucocytes, which were also found throughout the whole thickness of the corium, and in fewer numbers between the deeper cells of the epidermis.

The lesions of urticaria papulosa are peculiar. They consist primarily of a wheal, which induces subsequently a deposit of plastic material, the

¹ The Histopathology of the Diseases of the Skin, translated by Norman Walker, Edinburgh, 1896, p. 26.

² Annales de Derm. et de Syph., 2me sér., vol. i. No. 3.

resulting lesion being more permanent than the ordinary wheal. But, according to Schwimmer, this takes place in a reflex way, because the capillaries contract, and by the succeeding paresis incite the transudation in circumscribed localities, thus producing the wheal, which pathologically represents a circumscribed œdema.

Further investigations on the anatomy of the wheal, especially according to the valuable observations of Leloir and Gilchrist, have been given in the chapter on the general pathology of the skin, to which the reader is referred.

Diagnosis.—When the peculiar nature of the lesion is called to mind, no difficulty should arise in distinguishing urticaria from the erythemata proper and other affections to which sometimes it bears resemblance. The peculiar formation and coloration of wheals, and the sensations of pricking, burning, and stinging, together with the sudden appearance of the efflorescence, are characteristic. Its presence as a complication with other diseases may sometimes lead to confusion in the diagnosis; but in these cases it is to be remembered that it is generally only a secondary production, and is usually of minor importance, as with purpura. Erythema maculosum and papulosum may be confounded with urticaria; but they can usually be diagnosed by the absence of wheals and of marked-itching. In erythema multiforme there are, moreover, no wheals, but papules, which possess a different history. At the same time it must be stated that an urticarial element is sometimes met with in erythema multiforme. The same condition occurs in some cases of the erythematous variety of dermatitis herpetiformis. Erythema nodosum may bear resemblance to the tuberoso form of urticaria, but the tumors in the former disease are usually firmer and more persistent and much more inflammatory, and, as a rule, are painful and unattended with itching. The latter symptom, however, may not be marked in tuberoso urticaria. It is to be distinguished from acute circumscribed œdema, to which it is closely allied, and with which in some cases it has many features in common; and also from erysipelas. In the diagnosis, it is scarcely necessary to remark that the presence of all external causes, as the bedbug, common flea, mosquito, and the like, should be excluded.

Treatment.—The first point in the management of a case of urticaria is the thorough investigation of the cause which has given rise to the attack. In the greater number of cases this may be detected or suspected, and will be found to consist in some of the disorders referred to in speaking of the etiology. To remove or to relieve these is the task to be at once taken in hand. When the disease is acute and due to gastric disturbance, the treatment is to be regulated somewhat by the peculiarities of the individual, and also by the severity of the attack. In the urticaria of infants and children which tend to recur, strict attention should in all cases be given to the diet and hygiene, as well as to possible conditions of the various organs which may be centres of irritation.

The possible reflex nature of the eruption should be kept in mind, causes of this kind not infrequently occurring. The articles of food which the patient has been partaking of, and their freshness, should be rigidly inquired into. In acute cases an emetic of sulphate of zinc, ipecacuanha, or mustard may sometimes be administered with advantage, especially if food still be in the stomach.

The bowels should be evacuated at once, the saline purgatives, such as sulphate of magnesium or solution of citrate of magnesium or Rochelle salt, being especially useful. A simple aperient mixture consists of sulphate of magnesium, one ounce; compound tincture of cardamom, two drachms; compound infusion of rose, eight ounces. The dose is one ounce in a tumblerful of water, on an empty stomach. Another similar formula consists of sulphate of magnesium, one drachm; carbonate of magnesium, fifteen or twenty grains; peppermint water, one ounce. To be taken at one dose a half-hour before breakfast or in smaller doses a half-hour before each meal. For children, a powder composed of rhubarb, gr. iss; dried bicarbonate of sodium, gr. ii; and ginger, gr. ss, will frequently be found of service in correcting simple gastric disturbance. Subnitrate of bismuth, combined with small doses of calomel and opium, is likewise useful in allaying the irritability of stomach which sometimes follows acute urticaria. In other cases with manifest gastric disorder a mixture like the following may be given:

℞ Magnes. Carb., ℥ii;
 Bismuth. Carb., ℥ii;
 Tinct. Rhei, ℥iiss;
 Syr. Zingib., ℥i;
 Aquam, ad ℥viii.
 M.—Sig. Shake. Dose, one tablespoonful
 with water after each meal.

Free movement from the bowels should in every case be obtained as soon as possible. The repeated use of mild aperients, moreover, may generally be continued with advantage. Other cases, not caused by intestinal derangement, may often in like manner at first be treated advantageously by saline draughts, after which the mineral acids or other remedies, and a strict dietary regimen, may be prescribed. The diet should be of the simplest kind, with the avoidance of all stimulating food and drink. Tea, coffee, liquors, soups, spices, condiments, acids, sweets, and salted food are all to be avoided. Where there is a disposition to acidity of the stomach, alkaline preparations, as the bicarbonate of sodium in ten or twenty grain doses, lime water, liquor potassæ in ten minim doses, freely diluted, salicylate of sodium, hyposulphite of sodium, and other similar remedies, may be employed. The alkaline mineral waters, as Vichy, Vals, and the like, often prove refreshing to the patient, and are useful as adjuvants. But the treatment for a given case cannot be determined until its nature and cause have been investigated.

CHRONIC URTICARIA.

In chronic urticaria the bowels should be regulated by means of laxatives, preferably salines. The food should be nourishing but plain. Attention should be directed to the state of the general health, and especially to the condition of the nervous system, which is so often at fault. Inasmuch as the causes are often exceedingly diverse in their nature, and are in many instances obscure, each case will require special study. The cause will frequently be found to be apparently insignificant and altogether out of proportion to the amount of cutaneous disturbance. Whatever the derangement, no matter how slight, it should be remedied if possible. In some cases diuretics are indicated, such as acetate of potassium in fifteen or thirty grain doses, well diluted, and the Poland Spring and like waters are serviceable diluent and depurative remedies. The natural alkaline waters, such, for example, as Vichy, Vals, Royat, Carlsbad, and Saratoga (Vichy Spouting Spring), may be used. If gouty symptoms are present, they must be corrected by the use of alkalies and colchicum, or by such other means as the requirements of the case call for. A mixture such as the following will often prove serviceable in lithæmic cases :

R Potass. Citrat., ℥ii ;
 Liq. Ammon. Acetat., ℥ii ;
 Glycerinæ, ℥ii ;
 Aquam, ad ℥viii.
 M.—Sig. Dose, two tablespoonfuls
 four times a day.

Quinine often proves a valuable remedy, not only in cases showing an intermittent type, but also in other instances. It should be given as a full dose at night or in smaller doses at intervals through the day. Vidal¹ speaks well of the hydrobromate of quinine in chronic forms of the disease, in doses of from seven to fifteen grains daily for a fortnight, when the treatment is to be suspended and again resumed.

Salicylate of sodium is particularly valuable in cases where quinine seems indicated but has failed, in ten or twenty grain doses thrice daily, and will also often prove useful in other cases, as experience has taught me. While salicylate of sodium may in some cases produce the disease, it is at the same time a valuable remedy in other cases. Pilocarpine, introduced by Pick,² is useful, especially hypodermically. In some cases it acts with rapidity and satisfactorily, but it is a remedy that should be used with caution. The fluid extract of jaborandi, even in small doses, three or four times a day, will in some cases, especially where the skin is dry, afford relief. Sometimes, in chronic cases, pilocarpine hydrochlorate may be employed with advantage in children, one dose of one-sixteenth of a grain in some cases acting happily.

¹ Jour. Cut. and Ven. Dis., Aug. 1886, p. 232.

² Quoted in Phila. Med. Times, vol. x. p. 452.

In other cases benefit may be expected from ergot, a remedy worthy of mention. Atropine, recommended highly by Schwimmer,¹ Fraenkel,² and many others, is a useful remedy. It should be administered in doses of one-hundred-and-twentieth or one-hundredth of a grain of the sulphate hypodermically. Small doses of tincture of belladonna repeated every two or three hours until the system is impressed will sometimes be found useful.

Phenacetin, acetanilid, antipyrin, and antifebrin are all valuable in chronic urticaria, and often act speedily in giving relief. Tincture of strophanthus will in some cases act happily, in quantity from fifteen to twenty drops in the course of the twenty-four hours. Riffat³ gives a report of ten cases successfully treated with this drug. Copaiba has been successfully employed in some cases; likewise chloride of ammonium, in ten or twenty grain doses, as recommended by Trent,⁴ of Brooklyn, and others.

Hyposulphite of sodium and sulphurous acid may also be referred to as remedies well worthy of trial in obstinate cases. I have not infrequently obtained good results from their administration, and can recommend them in suitable cases. Arsenic is of service sometimes when other remedies fail, and is well spoken of by Wilson, Milton, Hardy, and others; but the cases must be carefully selected if benefit is to be expected. The bromides of potassium and sodium, chloral, chloralamide, and other sedatives will be found useful to calm the nervous system, which is often much disturbed by long suffering. Iodide of potassium in some cases, especially of the chronic form of the disease, acts favorably, and at times speedily, full doses being by no means always required. Sometimes relief may be obtained from the use of twenty or thirty drop doses of sulphuric ether, as suggested by Trouseau. Change of climate will occasionally be found to prove of benefit when all other means have failed.

LOCAL REMEDIES.

Local treatment is of considerable importance. The burning and tingling sensations peculiar to this affection are generally so distressing as to call for prompt and energetic external remedies. The patient should be divested of all irritating underclothing, and at night the bed-coverings should be light, and the sleeping apartment kept cool. Baths and lotions constitute the most desirable method of applying remedies. They may be prepared with various substances, and may be used either cool or warm, as may afford the most relief.

As the disease is sometimes very rebellious to treatment, a number of remedies may be referred to, for experience teaches that where one fails

¹ Viertelj. für Derm. und Syph., 1879, Heft 1, p. 134.

² Quoted in Phila. Med. Times, vol. ix. p. 352.

³ Practitioner, Nov. 1889.

⁴ Letter to the author.

another may prove serviceable. Sponging the parts with vinegar and water at times affords ease. So-called "toilet vinegar," diluted, is a more elegant and acceptable preparation. Salt water baths may be used with good result in certain chronic cases. In a few cases more benefit may follow the use of warm or hot water douches or baths than use of the ordinary antipruritics. One of the best remedies is alcohol, as a lotion, either pure or diluted. In many cases it will give speedy relief. Alkaline baths, made with the carbonates of sodium and potassium, sometimes are serviceable. For an ordinary tub, containing about thirty gallons of water, four or six ounces each of the salts constitute the average strength. Six or eight ounces of borax to the bath I have found useful, and in some cases more so if employed with warm or hot water. A handful of starch boiled in two or three quarts of water may be added to alkaline baths with advantage. Starch, gelatin, or bran baths, prepared in the manner indicated, are also in some cases serviceable. Sulphuret of potassium, two ounces to the bath, though disagreeable to use, may at times be employed with good result; likewise acid baths, containing hydrochloric and nitric acids, one ounce to thirty gallons of water.

Sulphurous acid, full strength or diluted with two parts of water, may be referred to. Carbolic acid, from one to three drachms to the pint, may be employed with excellent result, as in the following:

R Acidi Carbolic, ℥^{ss};
Glycerini, f℥^{ss};
Alcoholis, f℥^{viii}.

M.—Sig. Use as a lotion, diluted if required,
three or four times daily.

Of the tarry preparations the most useful is the "compound tincture of coal-tar," freely diluted, from five to twenty drops to the ounce of water. It is a cleanly and efficacious remedy, and of service where tar is tolerated by the skin. Another formula, to be used cautiously on account of the free alkali which it contains, is "liquor pieis alkalinus," diluted to a similar strength. Tercbene, twenty grains to the ounce of water, is well spoken of by Crocker, who recommends also a lotion composed of salicylic acid, ℥ⁱⁱ; borax, ℥ⁱ; and glycerin, q. s.¹ Fluid extract of grindelia robusta, one drachm to the pint of water; ichthyol, used especially as a lotion; and lead water, with a little glycerin in it, are also useful. Menthol and thymol, five or ten grains to the ounce of alcohol, are likewise of value, but while they are cooling at first they tend later to produce warmth. Benzoic acid with alcohol, ten to twenty grains to the ounce, may be referred to.

Chloral, twenty grains to the ounce; chloral and camphor, equal

¹ Mix the acid and borax with ℥^{iv} of glycerin, heat gently until dissolved, then add glycerin to make ℥ⁱ. This can be diluted with glycerin, alcohol, or water to any extent, ℥ⁱ of the stock, ℥ⁱ of alcohol, and ℥^{viii} of water being a good proportion to use.

parts, a half-drachm or a drachm to the ounce of ointment; chloroform; corrosive sublimate, one-quarter of a grain or more to the ounce; bromide of potassium, a half-drachm or a drachm to the ounce; diluted hydrocyanic acid, thirty minims or a drachm to the ounce; atropine, two grains to the ounce; may be mentioned as being useful. Acid lotions, as, for example, of acetic and citric acids; nitric acid, ten to thirty drops to the quart of water; weakened ammonia water; and carbonate of ammonium, fifteen to thirty grains to the ounce, may also prove serviceable. Collodion sometimes acts happily, and Pick's five per cent. strength "salicylic-gelatin," which belongs to the same class of media, may likewise prove of service. Certain forms of the disease may sometimes be benefited by the use of galvanism.

Prognosis.—A few days usually suffice for the relief of acute urticaria when due to gastric derangement. Relapses in these instances are liable to occur whenever the patient is exposed to the exciting cause, as various foods and fruits. The chronic variety is generally stubborn in its course, although sometimes it yields speedily to appropriate treatment. I have repeatedly observed cases that had long resisted varied powerful medication cured by such common simple remedies as sodium hyposulphite or salicylate. The prognosis must vary with the likelihood of the removal of the cause. It should, as a rule, be guarded.

DERMATOGRAPHISM.

The phenomenon of this affection, which has been briefly described with urticaria, may be defined, according to Barthélemy, as an aptitude of the integument to take on and keep, much amplified and more or less durable, the impressions that have been made upon it. While the term urticaria factitia is applicable for some cases, it is inappropriate for others. The general character of the lesions, including their elevation and coloring, is the same or similar in both conditions, but they differ in the spontaneity, localization, itching, latency, and the permanent state, potential and voluntary, for the one, and the intermittent state, and involuntary accessions with suffering, for the other. The sensibility of the skin is generally exactly the same upon parts in a state of dermatographie turgescence as upon parts not excited. While the great majority of cases are characterized by hyperæsthesia, occasionally anæsthesia exists.

Itching and burning are present in some cases, but in the majority of instances are wanting, no subjective symptoms existing. In most instances the discovery of the condition is made by accident. As it is indolent, the subject is not aware how long it has already existed. After it has developed the skin is readily influenced by pressure and friction, and the wheals are thus produced. The duration of the phenomenon is variable, but a half-hour is the average time, although in some cases it may last as long as a day or even two days. In some subjects the condition may be produced an indefinite number of times, while in others

it becomes less marked with each repetition. Sometimes it is localized, especially to the back and the chest, but oftener it is generalized.

The conditions under which it develops, according to Barthélemy, consist of (1) a specially susceptible nervous system, either hereditary or acquired, and (2) a toxin, acting either upon the peripheric vaso-motors or upon the central vaso-motors of the medulla oblongata or spinal cord. This writer thinks that all forms of the condition may be defined as a "multicolored, urticarial neuro-toxi-dermatitis" or as a "toxi-vasomotor dermatoneurosis." It is met with in diseases of the most diverse nature, including especially diseases of the brain and cord, hysteria, rheumatism and cardiac disease, aortic insufficiency, nervous influenza with gastro-intestinal disorder, leprosy, and, in a number of cases, with common urticaria. It occurs not only in the human race but also in animals, especially the horse. It may coexist with various diseases. In the author's opinion, the relation of certain hemorrhages of the skin, as spontaneous ecchymoses, stigmata, hæmatidrosis, and so-called "neurotic excoriations," to dermatographism is very close. The fact that a dermatographic subject may readily simulate various diseases, as urticaria, various erythemata, and many lesions, is to be remembered.

Inasmuch as there is an intoxication, the first effort should be to eliminate the toxic agents, by stimulating the various emunctories of the economy, especially by laxatives, diuretics, boiled milk, and alimentary hygiene in general. The nervous system is to be particularly cared for by means not only of drugs but also by such remedies as hydrotherapy, climate, exercise, and the like. Many drugs that are useful in urticaria are found to be of no value in this affection. Most cases may be relieved, and some may be cured.

URTICARIA PIGMENTOSA.

GENERAL OBSERVATIONS.

Under this name an unusual form of urticarial disease has been described, possessing features which entitle it to special consideration. When typical it is characterized by the formation of pinkish, reddish, yellowish, salmon- or fawn-colored wheals, and wheal-like lesions, which incline to persist, and to be sooner or later succeeded by yellowish, reddish, olive-greenish, or brownish pigmented spots. In typical cases the lesions have the character rather of a new growth in the skin than of a circumscribed œdematous inflammation or a wheal, the microscope also pointing to this view. The skin is generally sensitive and irritable, often highly so, the least excitement in many cases occasioning turgescence of the lesions, with a variable degree of itching and burning. The disease is usually chronic, lesions lasting an indefinite period, ordinarily over a period of many years. The disease may be mistaken for urticaria, for the erythematous and papular syphilodermata, and especially for the macular or tubercular form of xanthoma. It is also to be distinguished



DERMATOGRAPHISM.

The subject is a middle-aged man, whose skin has for six months been prone to the formation of wheals under the influence of local irritation or pressure. Thus, the urticaria-like markings seen in the photograph were produced by a blunt instrument, the wheals rising readily and persisting for a variable period, usually several hours. (Dr. HENRY W. STELWAGON'S case.)

from pigmented nævi. Cases have been recorded by Nettleship,¹ Morrant Baker,² Tilbury Fox,³ Barlow,⁴ Sangster,⁵ Morrow,⁶ Goodhart,⁷ Maekenzie,⁸ Cavafy,⁹ T. Colcott Fox,¹⁰ Crocker,¹¹ Stelwagon,¹² Elliot,¹³ and many others, both in Europe and in this country.

The first case was recorded by Nettleship, since which period numerous cases have been reported,—in all perhaps sixty. But all of these may not represent precisely the same disease. In some cases the urticarial element predominates, while in others there is a permanent soft nodular new growth in the skin, accompanied by or complicated with urticarial symptoms. The latter form was originally designated by Tilbury Fox “xanthelasmaidea,” on account of the resemblance of the lesions (sometimes striking) to those of xanthelasma palpebrarum. A more appropriate and shorter name, the author suggests, would be XANTHOMOIDEA, to which for the form accompanied with itching the term URTICANS may be added. The term urticaria is a misnomer for typical forms of the disease.¹⁴ The lesions rather suggest xanthomoid growths. The author has met with both forms. The lesions may be maculopapular and tubercular, or nodular.¹⁵ Mixed and complicated forms are also encountered, thus showing the process to be not infrequently complex in its evolution. Twenty-nine cases are referred to by Paul Raymond¹⁶ in his excellent essay on the subject, to which reference may be made for additional information. Most of the observations recorded, it may be mentioned, have been made in England, but the disease is well known now in all countries where dermatology is studied.

Symptoms.—The disease usually begins in the early months of life, during the first year, in some cases within a few weeks after birth. Usually wheals, but sometimes blebs, are first noted. It occurs upon the general surface, and in most cases is extensively distributed and profuse. The lesions are most numerous on the trunk, and next upon the limbs, but no region is exempt. Wheals, maculopapules, papules,

¹ Brit. Med. Jour., Sept. 18, 1869.

² Trans. Lond. Clin. Soc., 1875.

³ Trans. Lond. Clin. Soc., 1875. Fox describes the disease under the name of “xanthelasmaidea,” on account of its resemblance to xanthelasma, or xanthoma, and gives a plate representing a case in his Atlas of Skin Diseases.

⁴ Trans. Lond. Clin. Soc., 1877.

⁵ Lancet, May 11, 1878.

⁶ Arch. of Derm., Jan. 1879.

⁷ Med. Times and Gaz., Feb. 1, 1879.

⁸ Med. Times and Gaz., 1880, vol. i. p. 451.

⁹ Lancet, 1880, vol. i. p. 739.

¹⁰ Medico-Chirurgical Trans., 1883, p. 329.

¹¹ Clin. Soc. Trans., vol. xviii. (1885).

¹² Jour. Cut. and Gen.-Urin. Dis., 1889, p. 469.

¹³ Jour. Cut. and Gen.-Urin. Dis., 1891, p. 296.

¹⁴ The disease was named “urticaria pigmentosa” by Sangster, and Pick designated it “urticaria perstans pigmentosa.”

¹⁵ The nodular type of urticaria pigmentosa is portrayed in Crocker’s Atlas of the Diseases of the Skin, Fasciculus vi., Plate vi.

¹⁶ Urticaire pigmentée. Paris, 1888.

or nodules, pea, coffee-grain, or almond sized and shaped, or irregularly rounded, appear. They form rapidly or gradually, generally disseminated, but sometimes somewhat grouped; here and there a striated or a suggestion of an imperfect semi-circinate arrangement, composed of two or sometimes three lesions, may exist. There is usually noticeable symmetry, which, as is well known, does not occur in true urticaria. They incline to run together when seated in close proximity, but there is no disposition to form large lesions or patches, as in simple urticaria, even confluent lesions being sharply circumscribed in figure and outline. They are defined, firm, more or less elevated, and of a buff-yellow, yellowish-red, buff-brown color, becoming brownish-red, olive-greenish, or brownish as they grow older. To the finger they feel considerably tougher than normal skin, and they do not fade upon pressure. Upon being handled or rubbed they incline to become urticarial and redder. The color varies with the degree of congestion and of pigmentation. Occasionally the lesions are complicated with the formation of vesicating summits or even blebs, with a red zone around them. New lesions appear from time to time, the earlier ones undergoing involution in a variable manner, as a rule, very slowly. They usually become flat, with a finely granular surface or with a loose, wrinkled epidermis, and disappear leaving pigmentary spots, and occasionally even white cicatrices, as in a case reported by Hallopeau.¹ In other cases, according to Morrow,² here and there they leave little tabs of loose skin several millimetres in length which look and feel very much like minute acrochordons, only more flattened and triangular in shape.

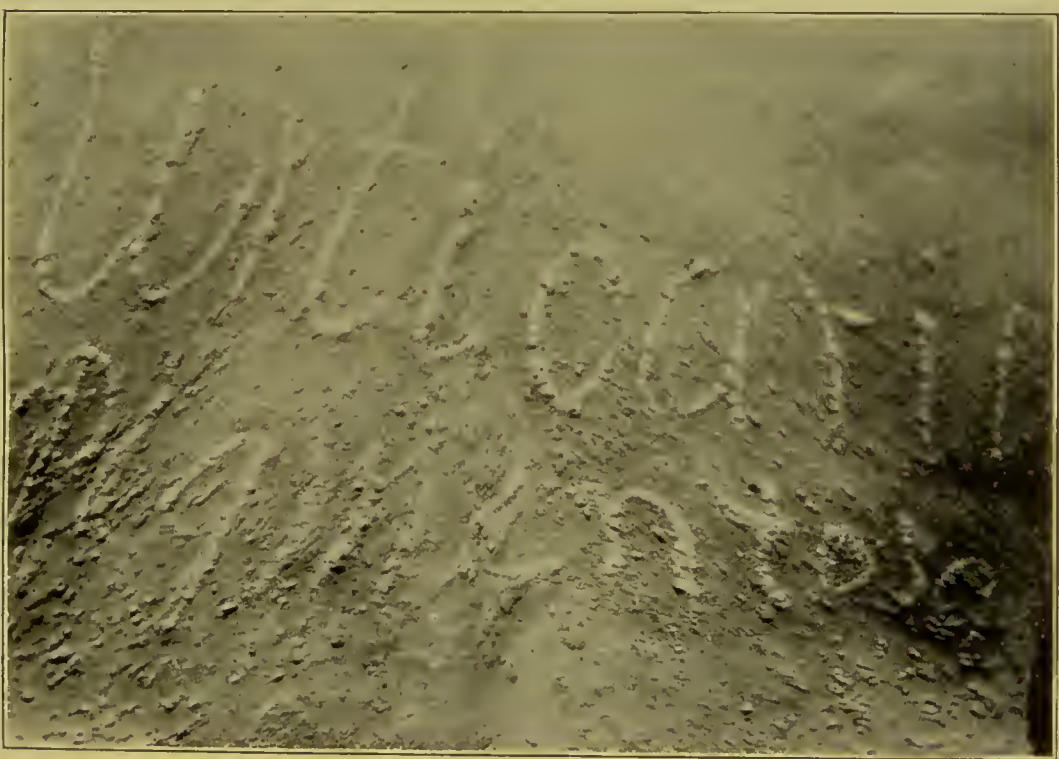
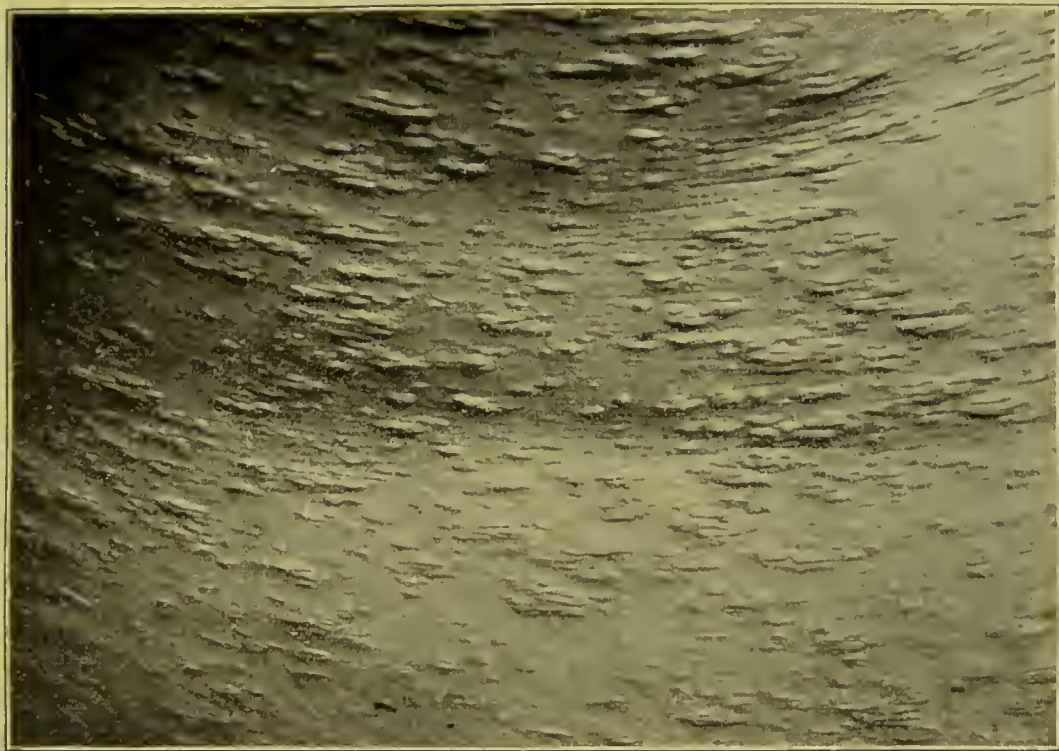
Itching is usually a prominent symptom, and may be distressing on account of its persistence. The skin in some cases is much more irritable than in others. Scratching is generally much indulged in in consequence, although, according to my experience, excoriations are very seldom induced. But itching is a variable symptom, and it may be absent altogether. In this respect the disease is different from urticaria, of which it has heretofore been regarded as a peculiar variety. In one of my cases the itching was not worthy of notice after the lesions had become established; in a second it was insignificant or wanting. Other observers (Baker, Tilbury Fox, Elliot, and Stelwagon) have also noted this point. In another case observed by the author both the itching and pigmentation persisted after the lesions had disappeared.

Etiology.—The cause of the disease is obscure. Its relations to true urticaria are not clear. Some authorities, as Tilbury Fox and Thin, have long maintained that it is distinct from urticaria and that it is to be viewed rather as a new growth. My observations many years ago³ led me to the view that two forms were met with, and that they

¹ *Annales de Derm. et de Syph.*, 1892, p. 628.

² *Jour. Cut. and Gen.-Urin. Dis.*, Nov. 1895.

³ See my *Practical Treatise on Diseases of the Skin*, third edition. Phila., 1881.



URTICARIA PIGMENTOSA.

The lesions occupy the general surface, especially the trunk, in the form of elongate or irregularly shaped wheals, which on disappearing leave a variable amount of brownish pigmentation of the skin. The subject is a man twenty-three years of age, and the disease has existed since infancy. The upper picture represents the anterior aspect of the thorax just below the nipple of the breast. These lesions are not ephemeral, but persistent, and in this respect differ from common wheals. The lower picture shows the lumbar region. The urticarial state of the skin is illustrated by the obvious fictitious marking in the lower picture, illustrative of the dermatographic condition of the skin. (Dr. PRINCE A. MORROW's case, under his observation, at intervals, since infancy. Seen by the AUTHOR.)



URTICARIA PIGMENTOSA.

The subject is a female child eleven months old. Disease began at the age of three and a half months, on the lower extremities; later invaded the entire surface, including the scalp. Lesions begin as persistent common, whitish, pinkish wheals; then become yellowish, later have a bluish tinge; finally flatten, disappear, and leave bluish-yellow stains. Some of the lesions resemble xanthoma. General health good. Contrary to the rule, itching was not a marked feature. A year later the disease was about the same, but somewhat less active. (Dr. HENRY W. STELWAGON'S case.)

were confounded by observers, one being a persistent urticaria of a peculiar type, the other having more the features of a new growth, the latter corresponding to the "xanthelasmoidea" of Tilbury Fox. In the first or simpler variety the lesions are in some cases much like those of urticaria in their form and evolution. I regard Morrow's case (which I had the opportunity of examining twenty years ago, and which is well known to dermatologists in New York) as a good example of this variety. The second form is rather of the nature of a new growth, clinically somewhat like papular xanthoma, but usually characterized moreover by an urticarial element. The two forms should be distinguished. The second form constitutes the type of the disease, and is a pathological process *sui generis*. The name of the disease should be reserved for this form, which, as I have suggested, may be called xanthomoidea. The lesions in this form resemble xanthoma multiplex more closely than those of urticaria. Most of the cases reported have been boys, and in nearly all the affection began before the age of six months, but the records also show cases in which it first appeared much later in life, and occasionally not until long after puberty. The course of the disease is eminently chronic, observation showing that it tends to persist throughout childhood, often until puberty, towards which period in many cases it disappears. In some cases, however, as in one reported by Lewinski,¹ lesions were still appearing at the age of eighteen years, and Jadasohn² records another where at seventeen years of age the disease still existed. G. T. Elliot³ reports a case in which the disease did not begin until the twenty-seventh year. It occurred in a man, aged thirty-two, the disease having begun five years before. The lesions were of the size of a small pea, became deeply pigmented, the pigmentation remaining for a long time, but ultimately fading away, and there was no itching. The disease is subject to distinct exacerbations, which occur at irregular intervals.

Pathology.—Raymond in one of his cases excised two portions of skin, one when the eruption was developing and the other during the process of involution. In the first, large granular cells in rows were found in the corium, and a few hæmatin crystals in the papillary layer. In the second specimen the granular cells in rows were breaking down, and there were more numerous crystals of hæmatin. The granular cells he noted were associated with the connective tissue, to which is probably due the peculiar color of the lesions.⁴

Microscopical examinations have also been made by Thin, Hoggan, T. C. Fox, Pick, Unna, Quinquaud and Nicolle, and others. Thin found the structure to resemble that of a cellular neoplasm, the accumu-

¹ Archiv für Path. Anat., Bd. lxxxviii., 1882.

² Verhandlungen des IV. Deutschen Dermatologischen Congress. Wien, 1894.

³ Jour. Cut. and Gen.-Urin. Dis., 1891, p. 296.

⁴ Opus cit., and Viertelj. für Derm. u. Syph., Heft 3, 1888, p. 490.

lation of cells being seated in a very fine connective-tissue framework. Other observers also have noted the marked cellular infiltration, which has been shown by Unna¹ to be a collection of very large flattened "mastzellen." They lie, distending the papillary body and flattening the epidermis above, closely packed, and are arranged in columns by the persisting collagenous tissue, between which, when spastic œdema is added, wide lymph-spaces open. Beyond their cubical form, these cells show nothing unusual. The disease has its seat chiefly in the papillary layer. The large number of "mastzellen" is regarded by Quinquaud and by Unna as characteristic of the disease, but the source from which they are derived, whether from migration or from connective-tissue cells, has been a question; Unna now believes that they have developed locally from the connective-tissue cells, which take up "mastzellen" granules. All other wandering cells, especially polynuclear leucocytes, are, he states, absent, even in the irritated spot. Jadassohn² and others have also directed particular attention to the presence of these peculiar cells. Drawings of sections are much like those of flat pigmented lentiginous nævi as described by Demiéville, with the addition of the "mastzellen." It may be summed up, from the various studies that have been made, that the lesion is a pomphous or pomphoid formation with an unusually abundant cell infiltration of "mastzellen," with œdema and increased pigment deposit in the epidermis. With each exacerbation of the disease there occurs a fresh deposit of these cells. It may be that in some cases the disease is of intra-uterine origin.

In the many cases recorded the varied treatment employed has not proved satisfactory. The disease is extremely obstinate to therapeutics. The indications are much the same as in urticaria. Atropine and pilocarpine have proved two of the most useful remedies. External treatment, consisting of antipruritic and stimulating remedies, in lotion or ointment form, should be instituted to afford relief to the subjective symptoms. In some cases stimulating ointments, like naphthol ointment, thirty or forty grains to the ounce of petrolatum, may be tried, as suggested by Barthélemy for dermatographism.

ŒDEMA.

ŒDEMA IS A CONDITION CHARACTERIZED BY THE PRESENCE OF SEROUS FLUID IN THE TISSUES OUTSIDE OF THE BLOOD- AND LYMPH-VESSELS, THROUGH WHOSE WALLS IT HAS EXUDED.

Symptoms.—Œdema, and cutaneous œdema in particular, has been considered in the chapter devoted to the general pathology of the skin, to which the reader should refer. As there stated, the process is compli-

¹ Histopathology of the Diseases of the Skin, translated by Norman Walker. Edinburgh, 1896.

² Verhandlungen der Deutschen Dermatologischen Gesellschaft, Vierte Congress, Wien, 1894, p. 384.

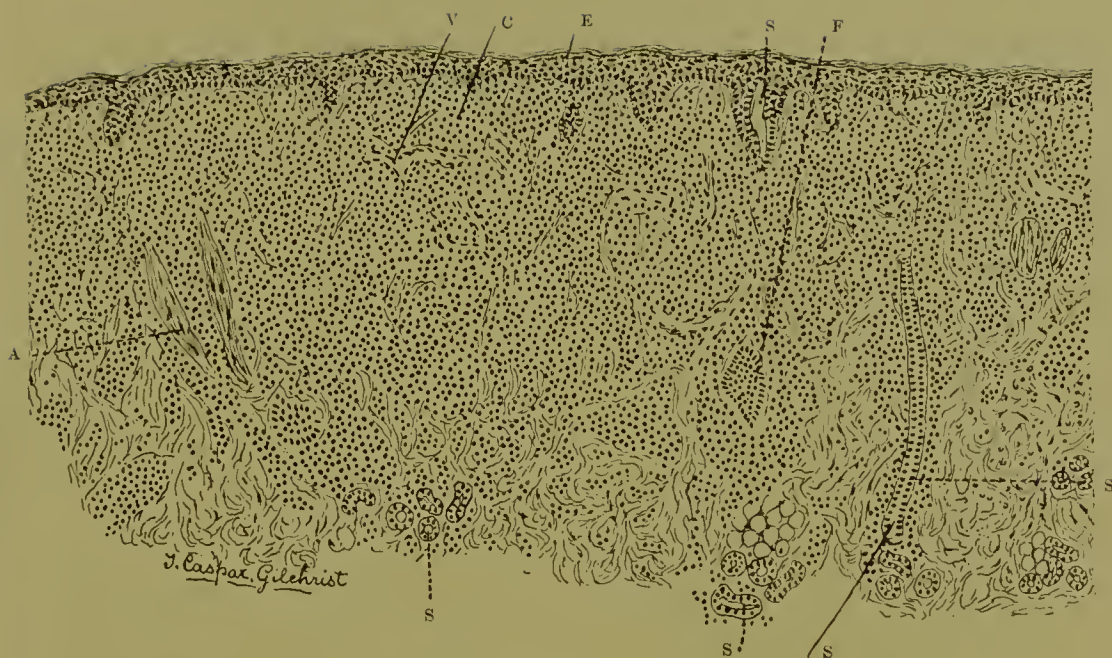


FIG. 1.

URTICARIA PIGMENTOSA.

The three Figures (1, 2, and 3) are drawings from sections obtained from a child seventeen months old who presented marked features of this disease. It began when the child was two months old.

Fig. 1 represents the larger portion of one of the nodules taken from the arm. At first glance it seemed to be a new growth in the corium, which had pressed so much on the epidermis (E) as to cause the disappearance of the interpapillary projections. The epidermis was unaltered, except that the deepest layer contained a considerable amount of pigment. The corium appeared to consist almost entirely of endothelioid cells (c) situated in a fine connective-tissue framework. In the less developed patches on the child these cells were arranged in small groups round the blood-vessels. These endothelioid cells are regarded by investigators as mast cells. After Unna's method for staining had been used they reacted to the stain, showing that they were mast-cells. The blood-vessels (v) were somewhat more numerous throughout the corium than in normal skin, but the sweat-glands (s) and sweat-ducts (s) were normal. The hair-follicles (F) were also unaffected. Magnified about 25 diameters. (Dr. T. CASPAR GILCHRIST's case, section, and description.)

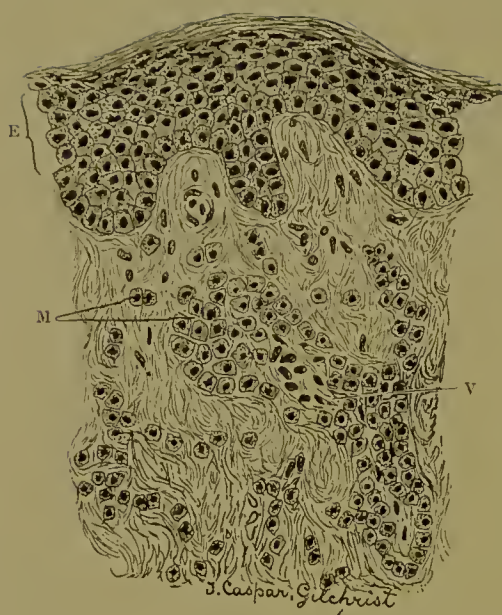


FIG. 2.



FIG. 3.

URTICARIA PIGMENTOSA.

Fig. 2 represents a magnified portion of the margin of Fig. 1, showing the mast-cells (M) arranged chiefly round the vessels (V, Fig. 2). Many of the mast-cells showed fatty infiltration in varying degrees, as is represented in No. 4, Fig. 3. Under this same Fig. 3 are shown a normal mast-cell (1) and a number of mast cells (2, 3, 7) some of the granules of which appear to have become confluent and to have formed larger deeply-stained masses. There was no evidence of inflammation in the nodules. The normal skin of the same case showed more mast-cells, especially arranged around the blood-vessels, than normal. The vesicular variety of the eruption showed that the vesicle was formed beneath the epidermis and that the whole corium was the seat of inflammation. Magnified about 250 diameters. [Further observations on this case may be found in *Johns Hopkins Bulletin*, vol. vii., No. 64, July, 1896.] (Dr. T. CASPAR GILCHRIST'S case, section, and description.)

ated. It is due to disturbance of the circulating fluids, especially the venous blood and the lymph. The forms of œdema which particularly concern the integument are those due to an impediment or change in the circulation of the blood arising from any cause which prevents the defluxion of the venous blood. The fluid which is thus forced out of the blood-vessels, and which constitutes the œdema, is always poor in albumen. The investigations of F. A. Hoffmann¹ show that the amount of albumen in the transudation alters in an almost direct ratio with the alteration of the amount of albumen in the blood-plasma. The changes in the walls of the blood-vessels concern especially the epithelium. The causes are varied, chemical changes in the blood, brought about through toxins, infections, and the like, and impressions upon the nervous system, being all well-known factors. Œdema covers a broad field, and shows itself with numerous manifestations in connection with the integument, most of which are ill defined in character, and many of them obscure in origin. The majority are in close connection with the central nervous system,—the system to which must be referred so large a number of cutaneous manifestations.

FORMS AND VARIETIES.

Œdema is met with frequently or occasionally in many affections of the skin, and in many instances is not well defined. It occurs as a more or less constant symptom in some diseases, but more frequently it exists as a slight or marked complication. Apart from the œdemas in which the skin is specially invaded, as ECZEMA, ELEPHANTIASIS, ERYSIPELAS, ERYTHEMA MULTIFORME, URTICARIA, there occur many œdematous swellings in which the integument as a whole is involved. Of this class ACUTE CIRCUMSCRIBED ŒDEMA; so-called MENSTRUAL œdema; the idiopathic œdema of PUBERTY;² HYSTERICAL œdema; œdema accompanying CENTRAL and PERIPHERAL PARALYSES; œdema in connection with RHEUMATISM and SCIATICA, and that following MALARIAL FEVER, which is closely related to malarial urticaria, may be cited.

Œdemas occurring about the eyelids and face, generally fugitive or ephemerous, are not uncommon in women, especially in connection with the menopause. Cases of this kind are not to be confounded with œdema due to infection, as in erysipelas and allied forms of disease, arising from local and other causes. The various forms of eutaneous swellings of nervous origin occurring at the menstrual period and at the climacteric have been described at length by E. Boerner.³

¹ Quoted from R. Thoma's Text-Book of General Pathology and Pathological Anatomy, London, 1896, p. 347.

² Two interesting cases of this form are reported by Pospelov, of Russia. See Archiv für Derm. und Syph., 1887, p. 1033.

³ Volkmann's Sammlung Klinische Vorträge, 1888, xi., Nr. 312. (Gynaekologie, Nr. 90.)

HYSTERICAL AND WOODEN ŒDEMA.

In addition to the common varieties of HYSTERICAL ŒDEMA, œdemas with color, as with whitish and bluish shades, are sometimes observed in hysterical persons. According to Charcot,¹ the white variety is rarer than the blue or blue-violet. Both are firm or hard, not yielding to the pressure of the fingers, and manifest remarkable lowering of the local temperature, sensory or motor derangements, and nearly always characteristic signs of hysteria. They come and go, and call for no special attention in the way of treatment. Charcot² has recorded several cases of hysterical œdema, in which the lesions ulcerated and simulated cancer. Sometimes unilateral œdema is met with, as in a case of serous infiltration reported by Bassi,³ occurring in a young, hysterical woman, in delicate health, in whom the manifestation recurred with every menstrual period.

It happens occasionally that œdema appears in the form of a firm, hard, incompressible induration, constituting so-called WOODEN ŒDEMA (ŒDEMA LIGNEA). The condition is met with chiefly in infants and children, owing to the peculiar development of the cutis at this period of life, the interfibrillar spaces in children being smaller than in adults. In the subcutaneous tissue of children, moreover, there is a much greater proportion of fat than in adults, and the blood-vessels are developed somewhat differently. This form is met with most frequently with nephritis, as Mircoli,⁴ who reports fifteen cases occurring with nephritis, has shown. It is very rare in this country. Indurated or hard œdema is also met with in the peculiar form of chronic rheumatic œdema first described by Verneuil⁵ in 1872 as "pseudo-lipoma supraclaviculare," but it may occur in other regions, and might be confounded with elephantiasis.⁶ Inasmuch as this form appears suddenly, is of indefinite duration, and recurs frequently, the author is inclined to view it as closely related to, if not the same affection as, acute circumscribed œdema. It is of interest to note that Potain⁷ has been able to prove anatomically that pseudo-lipomatous œdema is capable of organization and of passing into veritable lipoma by the adipose transformation of the connective-tissue cells of the hypoderm.

ŒDEMA NEONATORUM is characterized by serous infiltration of the subcutaneous tissue, due in most instances to vascular, pulmonary, or renal disease. It is therefore a symptomatic affection. It is to be distinguished from sclerema neonatorum.

¹ Lond. Med. Rec., Nov. 1890.

² Gilles de la Tourette, *Traité Clinique et Thérap. de l'Hystérie*, tome i. Paris. 1891.

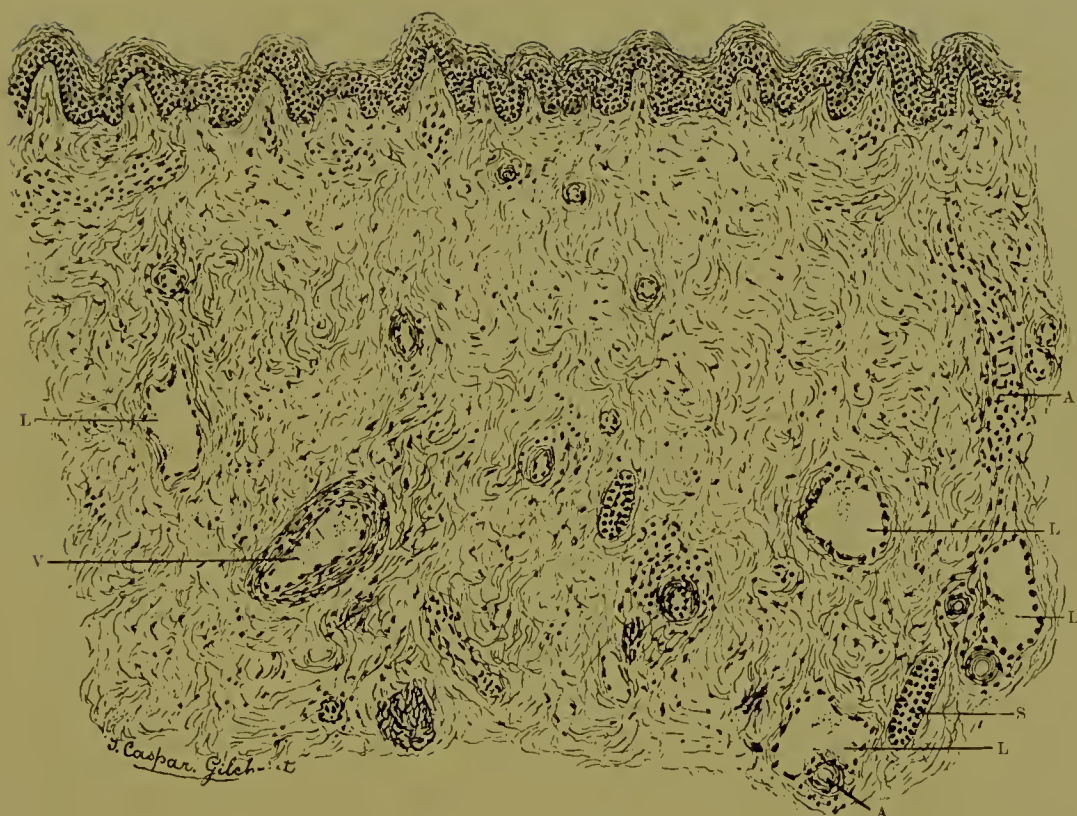
³ N. Y. Med. Jour., Oct. 24, 1885.

⁴ Gazz. degli Ospedali, No. 3, 1891.

⁵ See Chauffard, *Des Affections Rhumatismales au Tissu Cellulaire Sous-cutané*. Thèse d'Aggrégation, Paris, 1886, p. 137.

⁶ See Monatsh. für prak. Derm., 1891, p. 339.

⁷ Annales de Derm. et de Syph., 1892, p. 12.



ŒDEMA CUTIS.

The section was taken from a case of marked œdema of the leg of a full-blooded negress. Deep pitting could be produced on pressure. The portion excised was from the middle and lateral surface of the leg. The epidermis remained practically unaltered, except that it was rather thin, consisting of only two or three layers of epithelial cells. The papillæ were somewhat larger than normal, and were swollen. The whole corium also presented a marked œdematous condition, and the connective-tissue fibres were more widely separated than in normal skin. The lymphatic vessels (L) were found to be very much dilated, and only contained small quantities of coagulated albumen. One comparatively large vein (V) which was seen in this section was also much enlarged, but the arteries and arterioles (A) were practically unaltered. The sweat-ducts (S) were normal, as well as the nerves. The mast-cells throughout the corium were more numerous than normal, but no inflammatory symptoms were present. Magnified about 30 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)

ŒDEMA INDURATIVUM.

The form of disease known as ŒDEMA INDURATIVUM (Sigmund) or ŒDEMA SCLEROTICUM (Pick), characterized by peculiar changes in the integument of the labia in women, and in the prepuce, the skin of the penis, and the scrotum in men, which develops in the first or second period of syphilis, may be referred to. It occurs especially in women, and upon the labia majora, the skin being at first pale, yellowish, with enlarged papillæ, mammillated, like the rind of an orange, marked by numerous furrows, elastic, and painless. Later, when the process is at its height, the skin becomes of a deep copper, brownish-red color, and is coarse and verrucous. It must be distinguished from simple inflammatory lymphangitis, with or without abscess formation, and from sclerosis with nodular swellings. Mracek¹ and Finger² believe it to be due to a mixed infection, and not to syphilis alone.

ŒDEMA PERSTANS AND OTHER VARIETIES.

Attention may be directed to what may be termed persistent œdema (ŒDEMA PERSTANS), which may be localized or, much more rarely, generalized. Hallopeau³ describes an instance of the latter form in which, following an urticaria, there existed a generalized persistent œdematous tumefaction of the entire surface of the skin. It was hard and resisted pressure, had existed eighteen months, and resembled myxœdema, from which it differed in the absence of motor disturbances and of the cretinoid condition. Persistent œdema, especially that which follows erysipelas, occupying in most cases the face, is also worthy of special mention. It is characterized by swelling and redness, the latter disappearing after the attack, but the œdema persisting. It, too, is liable to be mistaken for myxœdema, and for elephantiasis. I have observed several remarkable cases of this kind, in which the erysipelatous attacks were notable for their brevity and their frequent recurrence, the process in one case extending over many years. The condition was a persistent œdema rather than an elephantiasis, with connective-tissue hyperplasia.

Under œdema are to be classed certain cases of so-called PSEUDO-ELEPHANTIASIS, especially those due to chronic rheumatism, mostly neuropathic, as described by A. Mathieu⁴ and others, in which the legs are generally affected. In this connection the forms known as arthritic "pseudo-phlegmonous œdema" (ŒDEMA PHLEGMASIACUM), described by Kirmisson and by Huchard,⁵ and ŒDEMA GELATINIFORME *scu*

¹ Archiv für Derm. und Syph., 1891, p. 166.

² Archiv für Derm. und Syph., Bd. xix. (1887) p. 53. See, also, same journal, 1891, p. 166.

³ Annales de Derm. et de Syph., 1893, p. 192.

⁴ Annales de Derm. et de Syph., 1893, p. 11.

⁵ Rev. gén. de Clin. et de Thérap., Dec. 20, 1894; abstract in Monatsh. für prak. Derm., Bd. xix., 1894, p. 158.

RETROMALLEOLARE may be referred to, the last mentioned form of which, according to Huchard, occurs in rheumatic subjects who at the same time have heart disease, though it is not due to the latter.

ŒDEMA FROM TRAUMATISM AND DEFECTIVE INNERVATION.

The œdemas due to TRAUMATISM must also be mentioned. Some of these cases are associated with lymphangitis, and Ravogli¹ has expressed the opinion that they are frequently due to a virus entering the skin through a scratch or an abrasion. The fact that some obscure cutaneous œdemas soon disappear under a corrosive sublimate dressing would indicate that they are due to some slight infection.

The œdema, generally erythematous, following INJURIES TO NERVES, due to neuritis, affecting especially distal extremities, and that which occurs in connection with DEFECTIVE INNERVATION, due to varied causes, as in SCLERODERMA and allied diseases, due in most cases, the author believes, to some disturbance of the central nervous system, are also to be referred to.

URTICARIA AND ŒDEMA.

Unusual forms of urticaria or of "urticarial disease" are not uncommon, and in most cases are complications either of urticaria or of other processes in which an urticarial element has supervened. Œdema and urticaria, being processes closely allied, not infrequently complicate each other, giving rise to diverse clinical manifestations which at times are difficult to classify. Some of these cases come under the heading of urticarial œdema (URTICARIA ŒDEMATOSA), in which the lesions consist of swellings which tend to appear and disappear rapidly, often involving the mucous membranes and the submucous tissue as well as the skin and the subcutaneous tissue; in other cases the deeper tissues are invaded rather than the skin, and the process may be more œdematous than urticarial.

Some of the so-called "ephemeral congestive tumors of the skin" might properly be classified here (ŒDEMA ERYTHEMATOSUM), while others are, more properly speaking, examples of true urticaria tuberosa, in which the urticaria sometimes occurs in raised, tuberoso, œdematous swellings, or in great elevated plaques. In certain rare forms of œdema gangrene occurs (MALIGNANT ŒDEMA). The gangrene is usually preceded by marked exudation of the blood, generally mixed with blood pigment, into the tissues (HEMORRHAGIC ŒDEMA), and is due to the "bacillus œdematis maligni," as Brieger, Ehrlich, Chauveau, and Arloing² have shown. The subject is more properly considered in connection with the subject of gangrene of the skin.

¹ Trans. Amer. Med. Assoc., 1892.

² Thoma, op. cit., p. 84.

ACUTE CIRCUMSCRIBED CUTANEOUS ŒDEMA.

Syn., Acute Non-Inflammatory Œdema; Angioneurotic Œdema; Periodic Swelling; Giant Swelling; Urticaria Tuberosa.

ACUTE CIRCUMSCRIBED CUTANEOUS ŒDEMA IS CHARACTERIZED BY VARIOUSLY SIZED AND SHAPED, SINGLE OR MULTIPLE SWELLINGS, AS A RULE APPEARING SUDDENLY, DISAPPEARING RAPIDLY OR SLOWLY, WITH A TENDENCY TO RECUR, UNACCOMPANIED BY MARKED SUBJECTIVE SYMPTOMS.

Symptoms.—Under this title Quinke,¹ Strübing,² Graham,³ Rapin,⁴ Matas,⁵ Riehl,⁶ Hartzell,⁷ Lovett,⁸ Joseph Collins,⁹ and others have reported cases in which evanescent, usually sudden, circumscribed swellings of the skin, subcutaneous tissue, and mucous membranes occurred, generally unaccompanied with subjective symptoms, but in some instances attended with a variable degree of itching and burning, together with gastric and intestinal derangement, particularly nausea, vomiting, and depression, and sometimes with respiratory disturbance.

It is characterized by œdematous tumefaction, with stiffness of the skin and subcutaneous tissue, in the form of variously sized and shaped circumscribed areas, sometimes several inches in diameter. In some cases the swellings are reddish, but in others, and usually, they are of the natural color of the skin. The swellings manifest themselves in most cases suddenly, reaching their maximum development in a few hours or a day, and after persisting for a variable period, hours or days, disappear slowly or rapidly; after they have disappeared there may be a sense of numbness in the part. Recurrences, sometimes occurring with periodicity, are frequent, and constitute a striking feature of the affection, which may thus continue for years. The lesions do not always recur in the same region. They may disappear in one locality to reappear in another. In some cases recurrences take place at short intervals, every month or two, in others at much longer periods. An analysis of numerous reported cases made by Collins shows that the average period of recurrence is nineteen days, and that the disease occurs mostly in the spring and summer.

This œdema occurs upon the mucous membrane as well as upon the integument, affecting the tongue, pharynx, larynx, and gastro-intestinal tract, which accounts for the crises met with in the latter region, characterized by dull and then sharp colicky pains, nausea, vomiting, and thirst. In one case, occurring in a lady, aged sixty, in the upper walks of life, seen by the author, in which the pharynx was involved, no defined lesion could be detected, but the general symptoms, together with the history, left no doubt as to the diagnosis.

¹ Monatsh. für prak. Derm., 1882.

² Zeitschrift für Klin. Med., Oct. 1885.

³ Canada Pract., Feb. 1885.

⁴ Rev. Méd. de la Suisse Rom., Nov. 12, 1886.

⁵ New Orleans Med. and Surg. Jour., Oct. 1887.

⁶ Wiener Med. Presse, Nos. 11, 12, 13, 1888.

⁷ University Med. Mag., 1890.

⁸ Boston Med. and Surg. Jour., 1890, cxxiii.

⁹ Amer. Jour. of the Med. Sci., Nov. 1892, to which the author is indebted.

Etiology.—The cause is often obscure. Thus, Wills and Cooper¹ record five cases, in all of which the patients were free from any organic disease which would have had any influence upon the production of the cutaneous condition. In no case was the temperature raised, and the oedema in all instances was painless. These observers take the view that it may be regarded as an "abortive urticaria." A distinct tendency to heredity exists in many cases, as pointed out by Strübing, Quincke, and Falcione. Osler² has reported a series of cases occurring in several generations of the same family, and other authors have noted the same hereditary tendency. Heredity also plays a part in some other forms of oedema. Thus, Milroy, of Omaha, describes a form of hereditary oedema in which there existed from birth a firm oedema of one or both legs without any special inconvenience or any progressive increase in the complaint,³ occurring in twenty-two cases in six generations. The origin of these peripheral angioneurotic vaso-motor disturbances is to be found in many cases in the central nervous system. In some cases there exists a history of rheumatism and a disposition to chills. The disease is more frequently encountered in adults than in children, wherein it differs from urticaria.

Diagnosis.—There are certain symptoms peculiar to urticaria which are not met with in oedema, and the affections should therefore be distinguished. Thus, itchiness, which accompanies all true urticaria, is generally absent in oedema, and in the latter disease there is usually pitting on pressure, which does not occur in urticaria. But this latter symptom is variable, and depends upon the form of the disease present, being absent, for example, in some of the nephritic and hysterical oedemas. The disease has its origin in the nervous system, and is closely related in its general pathology to urticaria. Sometimes urticaria coexists, and occasionally ecchymoses remain after the swellings subside. In some cases, according to Collins, there is burning at the site of the swelling, without the swelling becoming manifest; in other instances the swellings are elastic and may give a sense of fluctuation. It is a typical angioneurosis. It is obstinate to treatment, and the prognosis should be given guardedly, especially as to recurrences. The various internal and local remedies useful in urticaria may be employed, according to the case. Matas's case, which occurred periodically, was cured by quinine in large doses, but periodical cases do not always respond to this remedy.

EMPHYSEMA OF THE SKIN.

In rare instances EMPHYSEMA OF THE SKIN is encountered. The skin rises up in the form of a tumefaction characterized by the manifestation of crepitation felt with the finger. Alekshieff⁴ reports a case, occur-

¹ Brain, 1893, p. 382. (With bibliography.)

² "On Hereditary Angio-Neurotic Oedema," Amer. Jour. of the Med. Sci., April, 1888.

³ New York Med. Jour., vol. ii., 1892. ⁴ Russisch. Med. Rundschau, Bd. ii., 1876.

ring in a primipara, aged twenty-four, as a complication of parturition. Owing to contracted pelvis, the forceps were applied, when a swelling was observed above the right clavicle, which increased largely during uterine contractions. Subsequently an intumescence of the face, neck, and upper part of the thorax took place, which constantly increased, crepitation being felt distinctly between the fingers. There was a certain weakness of the respiration of the right side, and the reporter is of the opinion that the air reached the skin through laceration of the pulmonary tissue, the result of intense muscular contractions. The emphysema of the skin disappeared in twelve days without any treatment. Emphysema of the subcutaneous tissue is not so rare. Felsenthal¹ records the case of a child, two and a half years of age, who had suffered from measles with much coughing. Suddenly in the night numerous swellings appeared under the skin, on both cheeks, on the eyelids, and over the whole thorax down to the sacral region posteriorly. They felt as if filled with air, and crepitation could be observed around their borders, and there was a rattling sound on auscultation over the thorax generally. Similar cases are reported by Henoeh, Baginsky, and Damsch.²

In connection with oedema and emphysema, the affections known as "emphysematous gangrene," "gangrène gazeuse foudroyante," and "malignant oedema," may be referred to, further mention of which occurs with dermatitis gangrænosa.

ECZEMA.

Syn., Tetter; *Germ.*, Eczema, Eczem; *Fr.*, Eczéma.

ECZEMA IS AN INFLAMMATORY, ACUTE OR CHRONIC, MULTIFORM DISEASE OF THE SKIN, CHARACTERIZED IN THE BEGINNING BY ERYTHEMA, PAPULES, VESICLES, OR PUSTULES AND THEIR MODIFICATIONS, FREQUENTLY IN COMBINATION, ACCOMPANIED BY MORE OR LESS INFILTRATION, ITCHING, AND BURNING, TERMINATING IN SEROUS OR PURIFORM DISCHARGE WITH THE FORMATION OF CRUSTS OR IN SCALING.

Symptoms.—Any attempt to define so multiform and variable a disease as eczema must prove somewhat unsatisfactory. The word eczema is derived from the Greek verb ἐκζέω, to throw out by ebullition, from the circumstance that the acute vesicular and pustular varieties of the disease, which may be taken as the types of the process, are characterized by a superficial, active inflammation in the form of minute vesicles and pustules, which speedily rupture and pour forth their contents, the process tending to repeat itself. Formerly the definition was based upon the manifestation of the vesicular and pustular varieties alone, but our knowledge of the process has of late years been so enlarged that the term now has a wider scope. It includes not only most of the primary lesions, but also their modifications, which give rise to a number of

¹ Archiv für Kinderheilkunde, Bd. xiv. Hefte 1, 2.

² Quoted by Felsenthal, loc. cit.

well-known varieties of the disease. The process is one of the most clearly defined of those attacking the skin, both clinically and pathologically. Vesiculation, in a perfect or an abortive form, giving rise to a cutaneous surface more or less denuded of its epidermis, showing an oozing, weeping area, is the most typical and one of the commonest manifestations. But vesico-pustules, vesico-papules, papules, pustules, fissures, excoriations, scaling, crusting, sclerosis, and other secondary changes, are all common. From this observation it will be seen that the modifications of both the primary and the secondary lesions play an important part in the evolution of the disease.

It will be noted, then, that the term is employed in a broad sense, and is made to include a number of diverse primary and secondary lesions. Several of these forms of disease have until recently been viewed as distinct affections. In the light of modern pathology, however, we are enabled to group them together as belonging to one process. As we shall presently see, they are but varieties or stages of one disease. Regarding these varied manifestations in this manner, the study of the disease becomes simplified. Indeed, it is only by so interpreting the subject that eczema can be comprehended.

PROTEAN CHARACTER OF THE LESIONS.

It is eminently a protean disease. At one time it begins as an erythematous spot or a circumscribed area of inflammation, with more or less scaling, remaining such, it may be, for days or weeks; later, perhaps, this lesion becomes a moist, partially excoriated patch, terminating finally in a dry, desquamating surface. At another time it begins in the form of aggregated vesicles, seated upon more or less inflamed skin, with a variable amount of swelling and heat; the vesicles soon burst, and there results a red, weeping surface, pouring forth a liquid, gummy discharge, which quickly dries into crusts. The character of this patch may now suddenly or gradually change, and instead of a weeping, excoriated surface there may exist a dry, scaly, infiltrated, perhaps fissured area of skin, which may continue in a variable state until the disease is finally removed. On the other hand, papules may first appear. These may remain as such throughout their course or may be variously modified, or they may be associated sooner or later with vesicles. Such is a brief outline of some of the commoner of the changes which frequently take place. There is no other affection in which the lesions, both primary and secondary, undergo so many and so rapid alterations. Not infrequently we may observe several varieties of eczema manifesting themselves together or in turn upon the same individual. These changes and the modifications of the lesions are referred to more at length in the consideration of the varieties of the disease.

The disease may begin as an acute, as a subacute, or as a chronic pathological process, all three being common. It will be understood,

therefore, that a subacute or a chronic eczema by no means necessarily implies the previous existence of an acute eczema.

CARDINAL CHARACTERS.

In the consideration of the symptoms of the disease there are certain characteristics which are common to most cases. These are—1. Erythema, due to exudative congestion of the skin. 2. Distinct exudation into the skin, characterized by papulation, vesiculation, pustulation, and discharge. 3. Crusting or scaling. 4. Infiltration and thickening. 5. Itching or burning. The stage of the process, whether acute or chronic, as well as various influences, affects the skin and modifies these symptoms. The degree of redness varies with the lesions, the extent of skin involved, the stage of the process, the locality, and other circumstances. The variety of the disease, whether erythematous, vesicular, pustular, or papular, is also to be taken into consideration. An erythematous eczema is not necessarily redder than any one of the other varieties. In some cases the degree of erythema is slight, and in all instances the process primarily is superficial, having its seat in the upper layers of the skin. The secondary changes are seated deeper, but are confined to the corium. Exudation, giving rise to erythema, vesiculation, pustulation, or papulation, or to moist, oozing, excoriated puncta, or to a moist or to a dry patch, is always present. The extent of the exudation varies with the activity of the process and with the case. The crusting in the vesicular and pustular varieties is always a marked feature, being frequently excessive, the crusts forming and reforming rapidly, owing to the fact that the fluids continue to ooze from the skin for an indefinite period. Scaling, in the form of thin, minute and branny or thick and harsh scales, is also a common symptom in the erythematous and squamous varieties of the disease. It may be scanty or abundant. Inflammatory infiltration of the tissues, slight or extensive, is present in every case of the disease, and is especially marked in the subacute and chronic stages. It is the result of the exudation into the corium, and varies greatly in degree. In chronic eczema it is usually pronounced and often excessive, giving rise to a thickened state of the skin, which may be readily detected between the fingers. It is one of the most characteristic features of the disease. Pigmentation is a symptom which is occasionally present as a secondary manifestation, and is dependent upon the infiltration and other accompanying pathological changes. It is usually seen in chronic cases with marked infiltration, and especially on the lower extremities. The exudation, whether fluid or plastic, is generally considerable, giving rise either to discharge and subsequent crusting or to the deposition of plastic material in the form of papules or a patch. The presence or absence of discharge, that feature which for so long a time was regarded as a *sine qua non* of eczema, will depend entirely upon the lesions in which the process manifests itself. In the vesicular

and pustular forms, especially the former, the amount of fluid exudation is usually great, and is followed by crust formation. On the other hand, in the erythematous and papular varieties little or no discharge takes place, and consequently no crusts form. More or less desquamation or scaling, however, is always present in these cases, varying in amount with the stage of the disease, and also with the locality attacked.

ITCHING, BURNING, PAIN.

Itching, in varying degree, is an almost constant symptom of the affection. It varies in intensity from that which is merely annoying to that which is unendurable. In almost all cases it is a positive symptom. Though usually present at all times, it is generally worse at night, when the subject involuntarily scratches. It is notably prone to occur in the form of attacks, or spells, often without special or known cause, lasting a short or a long period, when it may be excessive, furious, and intolerable. At such times the skin is generally scratched and excoriated, and the disease aggravated. The excoriations so common in this disease occur readily because the epidermis is weak, tender, and abnormal.

Sometimes, in addition to the itching and burning, the skin is inordinately sensitive to external impressions of all kinds, including contact with the air, clothing, and local remedies generally, even to the blandest lotions and ointments, so that the patient may be in an almost constant state of anxiety and suffering (*ECZEMA HYPERÆSTHETICUM*). These sensitive eczemas are usually erythematous, erythemato-vesicular, or vesicular, especially subacute and chronic forms. They do not necessarily occur in chronic neurotic subjects. I have met with them in both sexes, in young adults as well as in the elderly, and in strong, vigorous persons as well as in debilitated subjects of either sex. The eczema in some cases is localized, but more frequently it is diffuse, and generally it is chronic. Such cases are difficult to cure, internal treatment and hygiene being much more useful than local remedies.

At times the sensation is that of burning rather than of itching, especially in the erythematous variety and in neurotic forms, whether erythematous or vesicular, while in other cases these sensations occur together. Occasionally the skin is the seat of distinct pain, especially burning pain (*ECZEMA NERVOSUM*). In the cases of this kind that I have met with the disease has usually been confined to the extremities, especially the legs. In other cases the subjective symptoms are mixed or are variable. In altogether exceptional instances subjective symptoms seem to be wanting, especially in erythematous and squamous lesions. A few striking cases of this kind have come to my notice.

STAGES AND COURSE.

The stage of the disease, or the status of the pathological process, has much to do with the manifestations of the lesions. With a given variety of eczema—as, for example, the vesicular—the picture varies greatly

in the several stages as to most of the symptoms enumerated. Thus, it may begin with the formation of a few or many acute or subacute vesicles, with or without marked redness of their bases, scattered or aggregated, constituting the **FIRST STAGE**. These sooner or later rupture or are scratched open, with the exudation of serous or sero-purulent fluid, which crusts. At the same time increased inflammation, with more or less cutaneous œdema, occurs, this period being the **SECOND STAGE**. The disease now either disappears gradually, with restoration of the skin to health, or, as is generally the case, becomes subacute or chronic, with secondary changes in the skin, consisting of a vesicating, weeping surface, with the formation of defective epidermis (imperfect cornification), excoriations, additional crusting, together with thickening and hardening of the skin, and either deficient or increased sealing, this condition representing the **THIRD STAGE**.

In the event of the manifestation of the disease being pustular from the beginning, the stages are much the same as in the vesicular variety, except that the process is less likely to be subacute and chronic, and the skin less apt to become thickened and sclerosed. In the papular variety the stages are not so well defined as in the preceding varieties. The process of cornification, exemplified by scaling, is conspicuous in the second and third stages, the papules or the patch composed of papular infiltration becoming more or less squamous. The acute, subacute, and chronic stages all manifest peculiar symptoms, in some cases being so different as to constitute altogether dissimilar clinical pictures.

The condition of the skin in eczema is spoken of as being moist (**ECZEMA HUMIDUM**), weeping, œdematous, spongy, dry (**ECZEMA SICCUM**), scaly, hard, sclerosed, warty, hypertrophic, excoriated, or fissured, as the case may be. These terms indicate the general external features of the case. The lesions are also referred to as being localized, generalized, or universal, the extent of the cutaneous disease being thus indicated.

Eczema either runs its course as an acute affection, lasting a few weeks and then disappearing not to return, or, as is oftener the case, assumes a subacute or a chronic state, continuing with more or less variation for months, years, or a lifetime. As a rule, it inclines to settle in the skin and to remain there for an indefinite period. In infants and children the disease may last from a month or two to several years, although the duration will in most cases depend upon the treatment employed. In these cases the skin becomes eczematous not only in the area originally affected, but also in the neighboring areas, new lesions of eczema tending to develop on slight provocation. Eczema having once appeared at a given point inclines to grow and to spread. It is in almost all instances progressive, but it does not necessarily spread by continuity.

It may appear as a limited eruption, in the form of variously sized and shaped, single or multiple patches, the usual mode of distribution, or it may show itself as a more diffuse disease, involving the greater

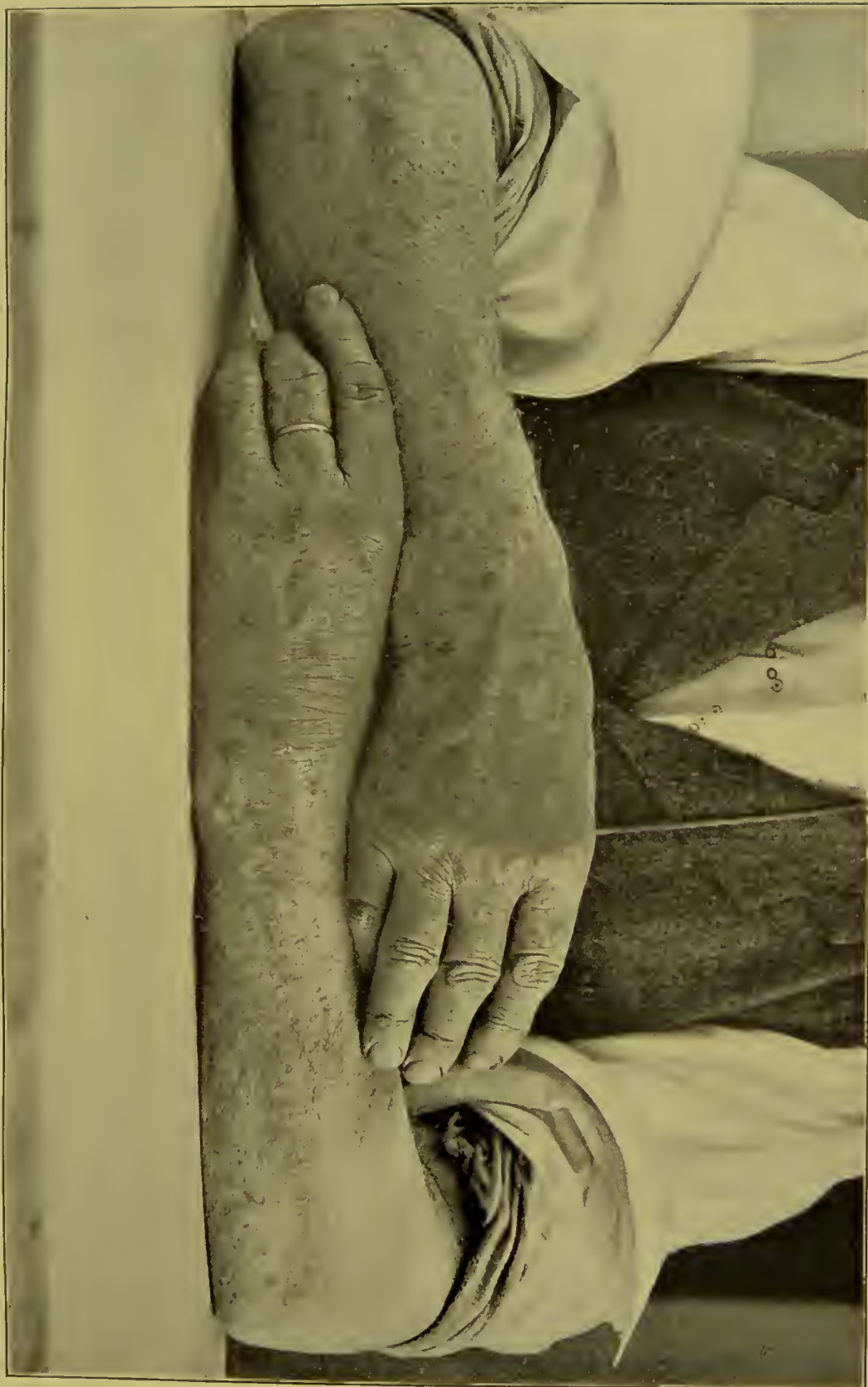
part or in rare instances even the whole of the body. Unless acute and occupying an extensive surface, symptoms of constitutional disturbance are usually wanting. In many cases it may be regarded as a simple cutaneous disease. It may be caused by diverse factors, some of them simple, others complex in their nature.

LESIONAL VARIETIES.

The varieties of the disease may now be described. The predominant lesion present denotes the variety. Thus, where an erythematous lesion prevails it is designated *eczema erythematosum*, whether the disease exists as a single small patch or as many patches involving a large area. The presence of fissures, where the skin manifests a ready tendency to crack and to fissure, as is so often seen on the hands, denotes an *eczema fissum*, and so on. The principal varieties are named according to the character of the lesions which the disease assumes in the beginning. They represent types of the disease based upon the anatomical changes in the skin, from which, however, there are numerous and varied deviations. The chief varieties are the following.

ECZEMA ERYTHEMATOSUM.—The primary lesion here is a macule,—an erythematous spot or patch. The course of a typical case may be described as follows. The first sign noticed is an erythematous patch, undefined in outline, and usually fading into the surrounding healthy skin. It may be small or large, the size of a small coin, as for example may occur upon the nose, or as large as a hand. There may be present slight œdema of the skin, varying with the locality, and with the amount of surface invaded. There is no fluid discharge or moisture, the skin being dry, and the seat of itching or burning. Ordinarily, in the course of a few days the patch is covered with a thin film of dry, exfoliating epidermis or scale, and at times, through excoriation, the mucous layer is exposed, when a slight mucoid secretion, as in *intertrigo*, may form. The color of the skin is usually dull or bright red, according to the subject and the degree of the inflammation; it also often has a slight yellowish tinge, at other times a somewhat bluish-red or violaceous hue, especially in elderly subjects. It may be punctate or uniformly diffused over the affected part, usually the latter; or, as frequently occurs, it may be mottled or in the form of numerous smaller patches or blotches, one upon or near the other. Upon the face, in particular, especially the forehead, considerable variation in color is apt to manifest itself. At one time the redness is bright, at another yellowish-red, or dull.

The disease may either remain localized to a small area or invade a large surface. It usually inclines to spread. The process, as a rule, varies in intensity from time to time, the disease being better one day than another, one week or month than another. It may even disappear partially or wholly for a time and then show itself again. Its course



ECZEMA.

CHRONIC, SUPERFICIAL, ERYTHEMATOUS VARIETY.

The disease is confined to the extensor surfaces of the hands and forearms of a middle-aged man. It has never appeared in any other variety or form. A rather common variety, especially on the upper and lower extremities and the head, but variable as to the form and shape of the lesions. It inclines to occur in patches, which are often more or less squamous. (The Author's case.)



ECZEMA.

CHRONIC, ERYTHEMATOUS VARIETY.

The disease is confined to the forehead of a middle-aged man, as is often the case in this form, and is characterized by a red and thickened, patchy state of the skin, with slight, adherent exfoliative scaling. Duration six weeks. (The Author's case.)

is variable, and at times is even capricious. It may pass off completely at the end of a few weeks, or, as is more likely to be the case if not treated, may assume a chronic course, attended by persistent infiltration and in time by thickening of the corium. It is exceedingly liable to relapse. The influence of heat or excitement, as a rule, aggravates the process, as does also a heavy meal, indiscreet diet, or indulgence in hot drinks or in liquors. The burning and itching are in most cases marked, generally constituting a prominent symptom.

Eczema erythematosum may remain as such until it finally disappears, or may undergo various changes, as, for example, into a moist or weeping surface, with more or less crusting. The locality attacked often determines the form into which it is likely to pass: thus, occurring where two surfaces naturally come into contact, as, for example, about the genitalia, it commonly becomes *eczema intertrigo*. This form is also known as *ECZEMA MUCOSUM*. The mucoid secretion present results from maceration of the impaired and broken-down epidermis. In the majority of instances, however, it terminates in scaling, becoming *eczema squamosum*. Vesicles or a vesicating surface are rarely seen, the patch usually remaining in the erythematous or squamous state throughout its duration. It frequently shows itself about the face,¹ particularly upon the forehead, and upon the sides of the nose; also upon the arms, thighs, and genitalia.

ECZEMA VESICULOSUM.—This variety usually appears in the following manner. There is a feeling of heat and irritation about the part for a short time preceding the eruption; then a diffused or punctate bright redness manifests itself, accompanied by itching and burning, which continues to increase until in a short time numerous, minute, pin-point to pin-head sized vesicles appear. They are either discrete or, as is more often the case, closely packed together; frequently they run into one another, becoming confluent and thus making a patch. They grow rapidly more prominent from day to day or even from hour to hour, until soon they become distended with a clear or opaque yellowish fluid. The skin is more or less swollen, pale or bright red in color, and the itching usually so intense that the patient is unable to resist scratching. Where the swelling is a marked feature, and the vesiculation comparatively insignificant, the condition is known as *ECZEMA OEDEMATOSUM*, and may bear some resemblance to *crysipelas*. The acute process is now at its height,² and thus far has run a rapid course. But the disease does not remain long in this condition; the vesicles soon rupture, either of their

¹ See the author's *Atlas of Skin Diseases*, Plate A, which represents the most typical expression of this variety of the disease. I believe this variety to be commoner in the United States than in Europe. Examples of it are seldom depicted in atlases.

² This stage of the disease is well portrayed in the author's *Atlas*, Plate T. See also plates in the atlases of Hebra and of the New Sydenham Society, in both of which oedema of the skin is shown in a marked degree.

own accord or through scratching, the fluid spreading over the surface and at once drying into yellowish, honey-like crusts. New crops of vesicles subsequently come out, or, on the other hand, the discharge exudes so rapidly from the skin that there is no time for perfect vesiculation. The quantity of fluid exuded is often large, at times running and crusting. Through maceration of the epidermis, and rubbing and scratching of the part, there soon results an excoriated, more or less red, weeping surface. The amount of crusting will depend upon circumstances, as, for example, the locality involved, exposure to the air, and the removal or not of old crusts. The disease may continue in this state for a few days, when the various symptoms may gradually subside; or, on the other hand, they may all become aggravated, the disease in this event gradually passing into another and more lasting stage, which has received the name of *ECZEMA RUBRUM*.

The typical vesicular eczema just described is met with frequently in one stage or another of its course; more often, however, associated with the vesicles we find also papules, papulo-vesicles, vesicle-pustules, pustules, and other lesions. It is in these latter cases, and they are common, that the variable character of eczema is most manifest. The lesions are often so multiform, indeed, that it becomes a matter of difficulty to determine whether, for example, vesicles or pustules predominate. Itching is the most prominent subjective symptom, being generally intense, and giving rise to an irresistible desire to scratch. After the vesicles have been opened through spontaneous rupture or scratching, and the fluid allowed to escape, the itching usually subsides somewhat, but with the advent of another crop it returns.

This variety may involve a small surface only or may occur extensively upon various regions. It frequently shows itself upon the face, especially in infants, constituting the "milk crust," or *CRUSTA LACTEA*, of the older writers. It also shows itself often about the fingers and where the skin is thin, as on the flexor surfaces of the forearms and wrists. The lesions show no tendency to group, occurring without regularity of distribution.

Following the description of typical vesicular eczema, mention must be made of a stage of the vesicular process representing a common clinical variety of the disease, which may best be described as imperfect or *ABORTIVE VESICULATION*. The condition is a stage or a state in which the epidermis either has not arrived at vesiculation or has prematurely broken down and been modified or destroyed. It is a vesiculating or vesicating form of the disease, but without the existence of formed vesicles. It is not only a well-marked clinical but also a definite pathological variety, as shown by the changes in the mucous layer of the epidermis. It is of common occurrence, and sometimes renders the classification of the variety of the disease present in a given case difficult. The manifest tendency of the process to assume one character



ECZEMA.

ACUTE, VESICULAR VARIETY.

The disease, occurring in a man aged thirty, occupies the left arm, forearm, and lateral aspect of the thorax, one-half of the body only being affected. The vesicles are minute, here and there confluent, forming irregularly sized and shaped patches. In the flexure of the elbow and on the arm there is a moist patch from which drops of eczematous fluid are oozing. Duration seven days. The picture shows the entire disease. (The AUTHOR's case, from a water-color drawing.)



ECZEMA.

ACUTE, VESICULAR, CRUSTED VARIETY.

Duration one week. The disease, occurring on the face of an old man, persisted three months, with relapses, in spite of active treatment, and terminated in the squamous variety, the entire face and neck being ultimately invaded. The man much of the time complained of malaise, and was reduced in weight to the extent of twenty pounds during this attack. (The AUTHOR'S case, under continued observation in the University Hospital.)

rather than another, as an erythematous, a vesicular, or a pustular, must be our chief aid in establishing the varieties of the disease. There are in many cases no defined lines separating one variety from another, so that a tendency to one variety or to another must determine this point.

ECZEMA PUSTULOSUM.—This variety, called also by some writers **ECZEMA IMPETIGINOSUM**, is closely allied to the preceding, with the difference that the lesions assume the form of pustules rather than of vesicles. They are formed in the same manner as the vesicles, but are accompanied by less swelling, heat, and itching. The pustules are usually larger than the vesicles, and are firmer in consistence, having thicker walls. They may develop as pustules, or, as is often observed, may become pustules from vesicles; or both lesions may exist at the same time, side by side. A strict line can seldom be drawn between the vesicles and the pustules of eczema. As in the case of the vesicles, the lesions generally burst, and are replaced by thick, bulky, light or dark greenish-yellow crusts, which dry quickly and may cover the skin completely (**ECZEMA CRUSTOSUM**). If the process continue, they may accumulate in quantity, causing much disfigurement, as is often noted in the scalp. Eczema pustulosum shows itself most frequently upon the scalp and face;¹ it is common in these regions in children and young people, more especially in the strumous and in those who are ill fed and improperly cared for. Upon the scalp it usually assumes a stubborn character. The pustules may appear here in great numbers, sometimes undermining the whole epidermis, giving rise to a most distressing form of the disease, which may pursue a chronic course. Where the process is active the pustules break down easily or even do not form at all, a denuded, excoriated, freely suppurating surface existing, as in the case of the vesicular variety. The fluid poured out varies somewhat in consistence and color, and possesses a mucoid, sticky character. It is often streaked with blood, and thus the crusts may be brownish as well as greenish. In very rare instances the puriform fluid may show either bluish or greenish colors, as in a case reported by Lindsay.² The patient was a man aged thirty-five, in whom the dressings from an eczema of the leg were stained blue and at times green, as though purposely stained with a solution of sulphate of copper or indigo. The urine was normal and not discolored. The patient was neither taking medicine internally nor using local treatment at the time. There was no deception. The case was also seen by Drs. McCall Anderson and Peel. Doubtless this is the same form of pathological change as that described by the French surgeon Verneuil³ as “orange-colored pus” in connection with suppurating wounds. Various colored pus is due to micrococci, in the case of blue pus to the *micrococcus cyaneus*. W. Roberts, of

¹ See Plate Y in the author's Atlas of Skin Diseases; see also Hebra's and Crocker's atlases.

² Med. Times and Gazette, May 9, 1878.

³ Phila. Med. Times, April 9, 1881.

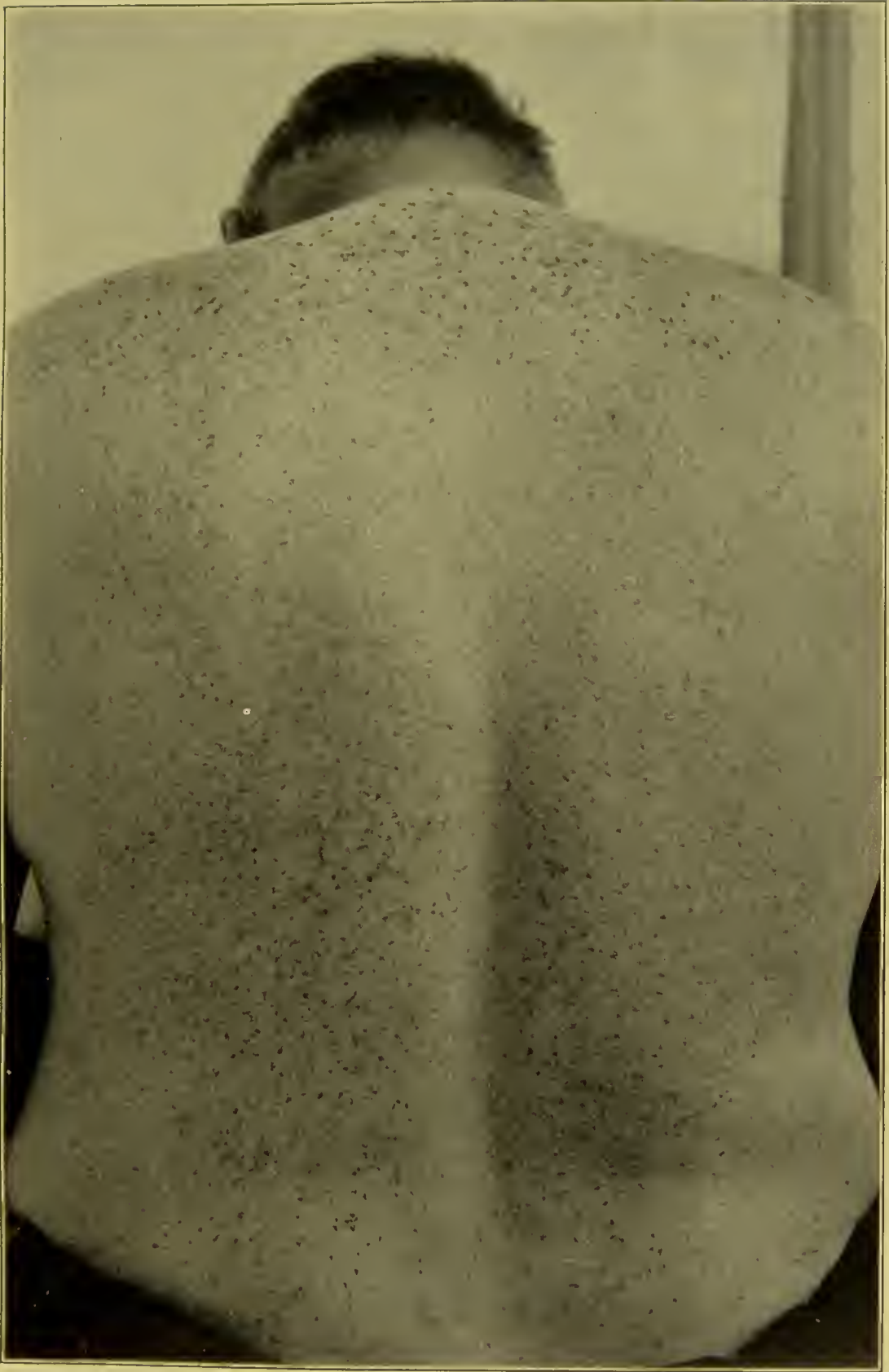
Manchester, has, moreover, observed eczema on the abdomen discharge chylous fluid, the urine containing a similar product.¹

Eczema involving the hair-follicles is usually pustular in character. The disease here has its seat primarily and chiefly in and around the hair-follicles, as in the case of sycosis. This form of eczema and sycosis have certain features in common, but the characteristics of eczema are lacking in sycosis, thus enabling the diagnosis to be generally clearly established. Eczema, however, does not incline, as a rule, to localize itself to any of the appendages of the skin. It tends to diffuse itself superficially over the general surface of the skin, and to remain so rather than to dip into the follicles specially.

ECZEMA PAPULOSUM.—This variety, known formerly as **LICHEN SIMPLEX**, is characterized by the appearance of papules rather than of vesicles or other lesions. While the papules may be typical, they frequently are considerably modified in form, sometimes appearing in the form of puncta, flat or elevated, in other cases as rounded, polygonal, convex, or flat formations. At times they assume the form of small or large pea sized, flat or raised, well or ill defined areas of infiltration, especially on the legs, where they are usually larger and more prominent than on other parts of the body. Although long considered to be a disease distinct from eczema, and termed lichen simplex, it is now generally recognized as one of the varieties of eczema. Its nature was first pointed out by Hebra. It usually appears in the form of small, round or acuminate, flat or elevated papules, varying in size from a small to a large pin-head. In color they are reddish; at times bright red, in other cases darker or violaceous. They may be discrete or confluent, and may occur in patches or in a disseminated manner over a considerable surface, without regularity of distribution. Ordinarily they begin as papules and continue throughout their course as such, usually excoriated, and may be covered here and there with blood-crusts. At times, however, they soon pass on into other lesions, as vesicles; or they may be associated with vesicles, both lesions occurring at the same time. Thus in papular eczema while true papules predominate, imperfectly formed papules, half-developed vesicles, or even typical vesicles, may appear. It is this clinical fact which proves that the vesicular and papular varieties are but manifestations of one and the same disease. Where the papules are overcrowded they are apt to run together and form solid patches, which, if they be subjected to violent scratching or other irritation, may become abraded, and may even result in eczema rubrum. Inasmuch, however, as the lesions usually remain discrete, eczema rubrum seldom follows papular eczema.

The papules are usually persistent; thus they may continue for some time without undergoing marked change, or may disappear and be re-

¹ Quoted by Mapother, *Papers on Dermatology*, London, 1889.



ECZEMA.

ACUTE, SMALL, FLAT, PUNCTIFORM PAPULAR VARIETY.

The disease occupies the entire trunk and the upper extremities of a stout, middle-aged man. The lesions are distinctly eczematous, but are peculiar in being flat and punctiform, often confluent, and somewhat morbilliform in their form and configuration. (The AUTHOR'S case.)



ECZEMA.

ACUTE, SMALL, ACUMINATE PAPULAR VARIETY.

The lesions are of a uniform, pin-head size, and exist in an aggregated form on the abdomen and hip of a man. Duration two weeks. (Dr. GEORGE HENRY FOX's case.)

placed by others, in the form of relapses. Where they aggregate into patches, infiltration is usually extensive. Papular eczema attacks by preference the arms, trunk, and thighs, especially the flexor surfaces.¹ It is rarely observed on the face or on the hands and fingers. It may invade a limited region or the greater part of the body. It is one of the most obstinate varieties of the disease. The subjective symptoms are generally more violent, and especially more persistent, than in the other varieties, the itching being often intolerable. Patients almost invariably scratch themselves severely, tearing the summits of the papules and causing them to bleed. Minute blood crusts consequently may almost always be noticed here and there over regions which are accessible to the hands. Even the skin between the lesions is frequently scratched and excoriated.

Sometimes the disease of the skin manifests itself in the form of lesions which bear considerable resemblance to those of lichen planus, and they may pursue a course similar to that of the latter disease. In these cases at no time does the skin manifest a disposition to show any other variety of lesion, being from beginning to end papular, but the character of the lesion is eczematous. To such cases the term *ECZEMA LICHENOIDES* is applicable. The resemblance in size, form, color, and general behavior to lichen planus may be close, especially on the legs, in middle-aged persons; they run a slow or chronic course, and may not be very itchy, or, if so, chiefly at intervals. In some cases of this kind little papular rounded or polygonal patches may form, with a scaly or glazed surface, which may prove rebellious to local remedies.

ECZEMA MADIDANS.

The principal varieties considered from the stand-point of the primary lesions having been described, there remain certain sub-varieties or forms of the disease which are important and call for special description. The first to which attention will be directed has already been incidentally referred to under the heads of eczema erythematosum and eczema vesiculosum, namely, *ECZEMA MADIDANS*, or "weeping eczema." This must be regarded rather as a condition resulting from previous morbid action than as a primary variety of the disease. It is a common and well-known clinical variety. It may result from either eczema erythematosum, eczema vesiculosum, or eczema pustulosum, as already indicated. In most cases it is a later stage of the vesicular variety. It is characterized by a more or less inflamed, reddish, excoriated, weeping surface, accompanied by varied other symptoms, it may be by venous stasis and œdema, and sometimes in chronic cases even by slight hemorrhage. Serum usually exudes freely, and at once forms into crusts; droplets of blood likewise may ooze from the lacerated and exposed

¹ See Plate X in the author's Atlas, in which the lesions are discrete and disseminated.

corium, which, together with the serous or puriform fluid, dries into thick, yellowish, greenish, or brownish crusts, often completely enveloping the region.¹ These crusts adhere closely and firmly to the part, and, unless detached by mechanical means, may remain there indefinitely, the disease continuing its course beneath the mass of effete matter. Eczema madidans, then, presents two appearances,—as it occurs with its crust, and as it exists without this covering.² In the one case the skin itself is obscured or masked by a dirty yellowish or brownish crust; in the other it presents a bright or violaceous red, punctate, wounded surface, deprived in great part of its epidermis, and exuding a scanty or profuse, clear or opaque, serous or puriform, syrupy, yellowish fluid, sometimes streaked with blood.

Eczema madidans may occur upon any part of the body. It is most common upon the legs, particularly in elderly working people, in the form of extensive patches, sometimes occupying the greater part or it may be the whole of the surface of the limb.³ It is for the most part chronic in its nature. Infiltration takes place in a marked degree, the skin becoming greatly thickened and hardened, feeling at times in old cases almost leathery. The hyperplasia in chronic cases of long duration is not infrequently considerable, and at times is so excessive as to suggest elephantiasis. The two diseases may coexist, and in some cases the line separating them may be difficult to draw. Eczemas in this condition may continue for years, not merely showing no disposition to spontaneous recovery, but, on the contrary, tending steadily to increase in their development.⁴ The flexures of the joints likewise are often the seats of eczema madidans; the groins and the cleft between the nates are also frequently affected, the condition in these instances generally arising from an eczema erythematosum or eczema vesiculosum.

ECZEMA RUBRUM.

The term ECZEMA RUBRUM is sometimes applied to eczema madidans, and also to a similar form of the disease without moisture. It implies a condition in which the primary elementary lesions have been modified or lost in the evolution of the process, secondary changes being usually the more prominent. The term rubrum is appropriate for many cases, but this feature is relative, and does not signify so much as the structural changes which take place in the skin which typify this form of the disease. Eczema rubrum, then, may be either moist or wet or dry and scaly, and may be of a variable degree of redness. The essential ele-

¹ See the face of a child, Plate O, in the author's Atlas, which represents the commonest form of infantile eczema.

² See Plate H H in the author's Atlas; also several excellent portraits in Hebra's atlas.

³ See Plate G G in the author's Atlas.

⁴ By the older writers eczema madidans of the leg was called "fluxus salinus;" and the term "weeping leg" is still employed by the class of patients seeking dispensary or hospital medical advice.



ECZEMA.

VARIETY RUBRUM, CHRONIC, OF THE LEG.

The subject is an elderly, stout working-woman. One leg is the seat of chronic eczema, characterized by an extensive, infiltrated, red, erythemato-vesicular, weeping, excoriated and crusted, diffuse patch, occupying the entire leg. Varicose veins are present. The crusts are in places thick and rough, especially over the shin. Duration five years. A common form of the disease. (The Author's case.)



ECZEMA.

CHRONIC, ERYTHEMATO-SQUAMOUS VARIETY, OF THE LEG.

The skin is reddened, infiltrated, thickened, in places slightly crusted, but generally covered with adherent, plate-like scales, in the form of small and large confluent patches. Duration three years. A common form of the disease. (Dr. HENRY G. PIFFARD'S case.)

ments consist in the manifold primary and secondary changes present, the process showing a tendency to become chronically affected. The disease, especially if neglected, inclines in most cases where patches exist to pass into this condition, whatever may have been the initial lesion. Eczema rubrum is, therefore, a common variety of the disease. It is indicative of an advanced stage of the process. Some cases illustrate both eczema madidans and eczema rubrum, but eczema rubrum is not necessarily an eczema madidans, nor is eczema rubrum in all instances a weeping eczema. It is met with especially upon the legs, particularly in middle-aged and elderly persons, and far more frequently among poor than among well-to-do patients. Infiltration is always marked.

ECZEMA SQUAMOSUM.

Another important clinical variety or form of eczema is that termed ECZEMA SQUAMOSUM. It is to be viewed as a stage of one or another of the varieties of eczema; it may follow the erythematous, vesicular, or papular manifestations of the disease, but especially the erythematous, in the form of dry, harsh, scaly patches. Papular eczema, when the lesions are confluent or seated so close together as to constitute a solid patch, may also result in squamous eczema, patches of this kind often being met with upon the extremities. It may also succeed eczema rubrum, scaling or desquamation, as the name indicates, being the essential element. When typical, it is characterized by variously sized and shaped, reddish patches, which are dry and are more or less scaly. At times the scales constitute a prominent feature, while in other instances they are scanty, the locality attacked determining to some extent the amount and kind of desquamation.¹ The scalp and the back of the neck, especially at the border of the scalp, are common regions to be affected. Infiltration is always present in a variable degree, though where the patches have existed for some time it is usually pronounced. The skin when taken up between the fingers is felt to be more or less thickened. This feature naturally exists in all degrees, being often slight, but in other instances extensive, depending upon peculiarities of the case. Squamous eczema may be, and is in many cases, merely an ephemeral or passing stage, showing itself for a short time only previous to the final disappearance of the affection. The term is commonly employed, however, to denote the chronic stage, which may continue without notable change for an indefinite period.

ECZEMA SEBORRHÆICUM.

The so-called "seborrhœic eczema" of Unna and other writers remains to be considered. It is a condition varying greatly in the degree of its manifestation and in its characters, so that it is difficult to define. It may be stated that, as the name implies, it often exists as a variable

¹ See Plate I in the author's Atlas, representing a typical case of squamous eczema of the back of the neck.

combination of these two diseases, partaking in some cases more of seborrhœa than of eczema, as shown by the glandular involvement, the regions affected, and the well-established observation that it often yields readily to the sulphur preparations, so useful in affections of the sebaceous glands. Some cases, however, possess characters which would entitle the process to be regarded rather as a disease *sui generis*, being neither seborrhœa nor eczema. It seems to the author that several conditions which should be distinguished have been confounded by some writers under this name.

The typical form of the disease is usually dry and squamous, and generally pursues a sluggish course, with a variable degree of itching. It is encountered most often on the scalp, on the face, especially the sides of the nose, on the upper lip about the moustache in men, and on the sternal, scapular, and dorsal regions, but it is by no means confined to these localities. Sometimes the patches are somewhat papular rather than erythematous, and not infrequently the borders are papular (LICHEN CIRCUMSCRIPTUS, ANNULATUS). Some cases that are designated by this title by some writers I am disposed to regard rather as congestive or exudative seborrhœa, inasmuch as the essential characters of eczema are wanting and the seborrhœic elements are striking. In typical cases, however, seborrhœic eczema may be looked upon either as a form of eczema complicated with seborrhœa or as a seborrhœa upon which eczema has supervened. The same complication is noted sometimes in psoriasis, though perhaps less frequently, the lesions being surmounted by more or less greasy, fatty, yellowish scales, especially marked on the scalp, face, back, and chest. This condition I regard as a seborrhœic psoriasis, by which is meant that the prevailing disease has involved especially the sebaceous glands. The same explanation applies to eczema. There are, however, as stated, cases of so-called seborrhœic eczema in which at no time in the history of the disease is the process eczematous. Thus, itching and burning may be wanting. Such cases I have for many years regarded as congestive or exudative forms of seborrhœa (because the disease seemed to be seborrhœic and not eczematous), the most typical expression occurring on the back between the scapulæ and on the breast over the sternum ("seborrhœa corporis"), on the sides of the nose, and on the upper lip in men. Most cases of this kind are in no sense eczematous, and therefore should not be called seborrhœic eczema. In some cases of so-called seborrhœic eczema both sets of glands seem to be involved. The secretion of sweat, by its absence as well as by its presence, influences them. They are commoner in hot than in cold weather, and where the skin sweats from heavy woollen underclothing, especially vests. They often yield readily to treatment. The simultaneous involvement of both sets of glands, especially in hyperæmic and inflammatory diseases, has been touched upon in considering the physiological functions of the glandular apparatus of the skin in



STUDY.

—*Portrait of a young woman, by the artist, 1880.*

The artist's study of the young woman, with her hair and hands, is a study of the human form, showing the artist's skill in capturing the essence of the subject. The woman's expression is serene, and her hands are positioned in a way that suggests a sense of calm and grace. The lighting is soft, highlighting the contours of her body and the texture of her hair.



ECZEMA.

SUBACUTE, ERYTHEMATO-VESICULAR, CRUSTED AND SCALY, SEBORRHOEIC VARIETY,
OF THE AXILLA.

It occurs in a middle-aged man, and is confined to this region on both sides and to the scrotum. The patch is circumscribed, with a tendency to spread on the border and to heal in the centre. Duration twelve years, with many exacerbations. Decided improvement occurred under the use of weak resorcin and boric acid lotions with mild ointments. (Dr. HENRY W. STELWAGON'S case.)

the chapters on the anatomy and physiology of the skin, to which the reader is referred.

Other lesions are encountered in eczema, as they occur upon one part of the body or another, which, having peculiarities of a defined character, are worthy of mention, as for example eczema fissum, eczema sclerosum, and the like.

ECZEMA FISSUM.

This variety is also known as ECZEMA RIMOSUM and ECZEMA RHAGADIFORME. Rhagades, or fissures, are observed not infrequently upon regions which, by their natural conformation, are subject to motion. The various joints, particularly of the hands and fingers, and the palms and soles, are the usual seats of these lesions. At times they are extensive, deep, and bright red in color, showing the true skin, and they may be so painful that movement of the part is difficult. They generally occur about the normal furrows of the skin, but they may show themselves anywhere, and even at right angles to the natural lines. They are also prone to form at the junction of the skin and the mucous membrane, as about the mouth and the anus. They are produced for the most part by motion or strain upon the eczematously diseased tissues, which, being weak, in many individuals incline readily to crack. They are found, more or less developed, in the erythematous, vesicular, and pustular varieties of the disease, especially as secondary lesions in the first mentioned. Sometimes, however, eczema fissum begins with fissures, especially about the hands and the feet, which continue as such throughout the course of the disease.

A subvariety of eczema fissum is that which has been described by French authors, notably Hillairet and Gaucher,¹ as *eczéma craquelé*, or "furrowed eczema," of which I have seen some striking examples in this country. It is characterized by superficial fissures or furrows in the epidermis crossing one another so as to form rhombic or diamond-shaped red or reddish² spaces of variable size. The superficial strata of the horny layer are the seats of the fissuring or cracking, deep fissures as in ordinary fissured eczema seldom occurring.

In the cases in which I have noted this rare and but little known manifestation, considerable surface was so invaded, especially the trunk, forearms, and thighs, the skin being reddened, slightly scaly, and harsh or even rough, and tending to desquamation in the form rather of flakes than of fine scales. The subjects in most cases were neurotic, and complained constantly of chilly sensations alternating with a sense of heat, and of burning and itching and pain. The skin was exquisitely sensitive to variations in temperature, and exposure of the trunk for an ex-

¹ *Traité théorique et pratique des Maladies de la Peau.* Paris, 1885.

² Hillairet and Gaucher give a colored portrait of this variety of eczema. The color, however, is much redder and darker than in any case I have ever met with.

amination of the skin usually caused shivering and other nervous symptoms. In one extensively developed case, in which the trunk and limbs were completely involved, occurring in a middle-aged gentleman, sudden relaxation of the nervous system generally took place during the examination in the consulting-room. On one occasion this was characterized by a chill, collapse, and sudden involuntary simultaneous discharges from the bowel and the bladder. The patient kept his bed for many weeks after this occurrence, in a debilitated, prostrated condition, and was still a sufferer with the same variety of eczema at the time of his death, less than a year later. The picture represented is sometimes a striking one, and then suggests a mild form of ichthyosis simplex which has become inflamed by injudicious local treatment. The disease, however, is solely eczema, and is of an aberrant, dry or moist erythematous variety with general superficial fissuring of the corneous layer.

Another rare variety to which French writers have directed attention is designated by them *eczéma cannellé*, and is characterized by small, round or ovoidal, well-defined, pale-red plaques, showing minute concentric furrows. It is met with most frequently on the backs of the hands.

The so-called CHAPS, as they take place about the hands, mouth, or other localities, may here be referred to. They are fissured lesions, often slight, which are liable to occur and to recur, especially in skins which have a disposition to eczema, or in those which are abnormally weak and tender. They indicate a debilitated or poorly nourished skin, and are met with most frequently in strumous subjects. They are due to various exciting causes, such as the use of external irritants, strong soap, and acids, to the excessive use of water, and especially to manual labor, and to exposure to cold weather and to wind.

In connection with the diagnosis of fissured eczema, FISSURE OF THE ANUS and IRRITABLE ULCER OF THE RECTUM may be mentioned. Both are painful affections, due to varied causes, particularly constipation and straining. They are liable to be confounded with eczema, with syphilis, and even with carcinoma. The ulcer is usually found just within the orifice, having an elongate or club-shaped form. The fissure tends to break open again after having been healed.

ECZEMA VERRUCOSUM ET SCLEROSUM.

In thickened, infiltrated, raised, localized patches of eczema a rough, warty, verrucous condition at times shows itself, the appearance being due to an hypertrophied state of the epidermic layer, as in warty growths generally. The condition may be properly called ECZEMA VERRUCOSUM or PAPILLOMATOSUM, as suggested by Erasmus Wilson; or, if simply hard, rather than wart-like, ECZEMA SCLEROSUM. This latter form is observed most frequently about the palms and soles, especially in mechanics and laborers. But the verrucous variety occurs in various regions. In a remarkable case in a woman aged fifty, observed by the author in the



ECZEMA.

CRACKLED VARIETY.

The case is that of an old man, whose general surface, especially the trunk, arms, and thighs, is the seat of the crackled variety of eczema. It is characterized by generalized, superficial, retiform epidermic fissures. The skin is moderately erythematous, dry, and harsh. The disease is subacute. The appearance is suggestive of cracked china. It is generally a neurotic manifestation of the disease, and is rare. (Dr. HENRY W. STELWAGON'S case.)



ECZEMA.

CHRONIC, VERRUCOUS VARIETY.

It exists in the form of thickened, warty, confluent patches on the ankles and the backs of the feet of a middle-aged man. Duration five years. History of eczema. It bore resemblance to lichen planus in patch form. (Dr. HENRY W. STELWAGON'S case.)

University Hospital, one patch was over the tibia, another on the inner surface of the knee, and a third in the popliteal space, all having existed for fifteen years, rebellious to treatment. The patches were raised from one-eighth to one-quarter of an inch, were warty, red, non-pigmented, and itchy, and possessed a history of eczema, including discharge and crusting from time to time.

Some other forms or local manifestations of the disease may be briefly referred to, indicating peculiarities of form or pathology, which, however, are either of no special importance or are not thoroughly understood as to their mode of development. Of these "eczema orbicularis," "eczema circumscriptum," "eczema marginatum," "eczema exfoliativum," "eczema psoriasiforme," and "eczema sycosiforme" may be mentioned.

ECZEMA ACUTUM ET CHRONICUM.—A natural and at the same time an important and proper division of eczema is that into acute and chronic. The line which separates the two conditions, though not sharp, is one which may usually be drawn by means both of its clinical and its pathological features. The division relates not so much to time as to certain pathological changes which occur during the course of the disease, and which it is necessary to bear in mind in viewing the subject of treatment. Eczema, as a rule, inclines to run a chronic course; there are, however, many exceptions, constituting examples of typical acute eczema, in which the whole process completes itself in a brief period. These constitute the simple or benign eczemas, and are met with chiefly in children and in young persons. They run what may be called a cyclical course. So long as the general inflammatory symptoms are high, and the secondary changes insignificant, the disease may be said to be acute; when, however, the process has settled itself into a definite line of action, continually repeating itself, accompanied by secondary changes, the disease is to be considered chronic. The terms are also at times applied to the length of time for which the disease has existed.

Another important division of the process is into SUBACUTE ECZEMA, a condition which is of very frequent occurrence. Many cases that we are called upon to treat are in this stage, being neither acute nor chronic, but tending towards the latter. Like the chronic form, it inclines to repeat itself from time to time with new lesions, being as it were in an uncertain, shifting state. The condition of the disease is variable, at one time better, at another worse. This is a notable feature both in the subacute and in the chronic form. Eczema possesses a distinct tendency to relapse, and to recur at longer or shorter intervals.

Pigmentation occurs at times in chronic eczema, especially upon the legs, and to some extent upon regions where pigmentation is physiologically present, but it seldom occurs elsewhere in a marked degree. The natural complexion influences the pigmentation, persons with dark or dusky skins being much more prone to its manifestations than others.

Upon the legs it is common in connection with venous engorgement and ulcers.

COMPLICATIONS OF ECZEMA.

Complicated eczema is a subject of considerable importance. The occurrence of eczema with other well-known cutaneous diseases is unusual, but it must be remembered that eczema may coexist with many affections that attack the integument, as Rayer¹ pointed out many years ago. Thus, IMPETIGO, ECTHYMA, PSORIASIS, FURUNCULUS, ABSCESS, SYPHILIS, LEPRO, PEDICULOSIS, and SCABIES may all complicate the natural course of eczema, giving rise to mixed eruptions, thus making the diagnosis difficult. Occasionally both diseases are so equally pronounced in their manifestation that the case may be viewed as being either one disease or the other; of this condition the concurrence of eczema and psoriasis, and that of eczema and seborrhœa, offer striking examples. In other cases the alternate manifestations of eczema and psoriasis are observed. It must be kept in mind that the merging of eczema into various inflammatory, and especially diffuse, diseases is a possible occurrence, and that such affections as dermatitis exfoliativa sometimes take on an eczematous character. The association of the eczematous process with other diseases is further illustrated in PAGET'S DISEASE, or ECZEMA EPITHELIOMATOSA, as it might be called, and in certain rare, vague, anomalous diseases which have been given such names as "vesicating erythema," "eczema-erysipelas," and "eczema-urticaria." Mapother² reports several cases of apparently eczematous disease involving the tragus and hairless skin in front of it which bore a striking resemblance to Paget's disease of the mammary areola, and Crocker has seen the same condition on the scrotum. It may therefore be stated that chronic localized eczemas in the middle-aged and elderly may in rare instances lead to carcinoma.

MIXED FORMS OF ECZEMA are occasionally encountered, the eczema being complicated with local dermatitis of one kind or another, as, for example, from rhus or arnica poisoning. Jonathan Hutchinson³ describes the occurrence of erysipelas with eczema, with a line of demarcation and with œdema, and in some cases with chronic eczema in other parts of the body. In rare cases syphilis may complicate eczema. A few notable cases involving especially the scalp have been under my observation.

Kaposi⁴ describes an alarming complication of vesicular and pustular eczema infantum, especially of the face, occurring in the form of an acute outbreak of numerous vesicles, partly scattered, partly arranged in groups. They are umbilicated, and look like varicella vesicles. They occur chiefly on already eczematous skin, but smaller groups appear upon

¹ Diseases of the Skin, English translation, p. 296. London, 1835.

² Brit. Med. Jour., Jan. 5, 1889.

³ Archives of Surgery, Jan. 1890.

⁴ Pathology and Treatment of Diseases of the Skin. Translated by James C. Johnston. New York, 1895.



ECZEMA.

VARIETY RUBRUM, CHRONIC, UNIVERSAL.

An elderly man, subject to obstinate eczema madidans et rubrum for many years. Latterly universal, and more squamous than formerly. The skin is everywhere thickened and leathery, and here and there exudes scantily. In most localities thin, grayish, adherent scales exist. (Dr. GEORGE HENRY FOX's case.)



ECZEMA.

VARIETY RUBRUM, WITH CONCOMITANT ICHTHYOSIS.

A strumous boy, six years of age, with ichthyosis, and chronic eczema rubrum invading the general surface. The knees and feet show ichthyosis simplex, the legs crusted eczema. (The AUTHOR's case, University Hospital.)

the previously sound skin of the neighborhood, upon the forehead, ears, neck, and even the shoulders and arms. The skin which has been attacked in this manner now becomes still more swollen, and even tense. The little patients have high fever. The vesicles develop very acutely, sometimes overnight, in large numbers, and often continue to appear, in successive crops, for three or four days or even a week. Those which appear first undergo desiccation, rupture, and expose the corium, or become encrusted and fall off. The prognosis is in most cases favorable, the exposed surfaces being covered with new skin in two or three weeks. In many places pigmented spots, or even scars, remain. The previously existing eczema changes its character only so far as it has been influenced by local treatment. Kaposi has observed ten cases, and suggests the term "eczema herpetiforme" as being suitable to express the condition, which he suspects is due to a fungus. The cases observed all ran a rapid course. In one case in a child aged six months death occurred after convulsions on the sixth day of the disease, when the eruption was everywhere recovering.

Cases are occasionally met with in which an eczematous condition superimposes itself upon ICHTHYOSIS, especially upon one or both upper or lower limbs, repeated attacks of the eczema leading to hypertrophy of the skin, resembling sometimes elephantiasis or even myxœdema. I have also noted in one case the occurrence of an erythematous dermatitis, almost universal, upon an ichthyosis simplex, which persisted (for at least several years), taking the place of the original disease. The inflammation of the skin was markedly erythematous, bright red in some places, exfoliatively squamous, persistent, and chronic, varying little from year to year, and resembled both erythematous eczema and exfoliative dermatitis. It was always much better in summer than in winter. The itching was not so marked as in eczema.

The involvement of the LYMPHATIC GLANDS situated near the eruption in eczema is a frequent complication, especially in the case of infants and children. The glands, particularly in the scrofulous and in persons deprived of sufficient and proper food, readily become engorged, and sometimes suppurate, because of the irritation to the integument set up by the eczema. The glands of the head, neck, and groin are those most frequently affected.¹ In eczema of the legs in elderly people, especially among the lower classes, the nutrition of the integument is frequently much impaired, owing to a variety of causes.

EDEMA, extremely variable in degree, must be referred to as not infrequently accompanying eczema, especially of the lower extremities, but it is also met with elsewhere, as about the face and the genitalia, as might be expected in the last-named regions from the abundant distribution of lymphatic vessels.

¹ For further information on lymphatic complications in eczema the reader is referred to the French thesis of Roland. See abstract in Jour. Cut. and Ven. Dis., 1883, p. 249.

As a result of malnutrition, and of impeded blood and lymph circulation, accompanied by prolonged stasis, there occur, as complications of the eczema, OEDEMA, VARICOSE VEINS, PETECHIÆ, and larger hemorrhagic areas, with multiple or solitary ULCERS, and an indurated, pigmented, thickened or sclerosed and hypertrophic condition of the whole integument, including sometimes the deeper subcutaneous structures.¹

When a person with eczema is attacked with a febrile disease, as, for example, typhoid fever, the cutaneous disease usually disappears, but only to reappear in most cases upon recovery from the fever. I have observed several notable cases of chronic papular eczema disappear and recur under such conditions. Sometimes, however, especially in erysipelas, the eczema does not recur.

Etiology.—Eczema is by far the commonest of all the diseases of the skin. It occurs more frequently in some countries than in others. In this country, among 123,746 cases of miscellaneous skin diseases collected by the committee of statistics of the American Dermatological Association, occurring in Boston, New York, Philadelphia, Baltimore, Chicago, and St. Louis, there were 37,661 examples of eczema, or over thirty per cent. In Philadelphia, according to my experience, it constitutes nearly forty per cent. of the entire number of cutaneous diseases. In Boston, according to White,² the percentage is similar; of 5000 cases of skin disease encountered in the out-patient department of the Massachusetts General Hospital, 2242 were eczema. In New York, Bulkley³ makes the proportion less,—namely, about one-third of all the cases. Anderson,⁴ in Glasgow, in 10,000 cases in hospital practice encountered 2527 examples; while Hebra,⁵ in Vienna, in 29,535 cases met with in thirteen years in the General Hospital records only 2195 cases, or not quite eight per cent.; but at the latter hospital children rarely appear, a point that must be taken into consideration. More recent reports give 517 cases of eczema among 3217 cases of skin diseases, or somewhat over sixteen per cent., which is probably nearer the actual proportion. Thus it will be noted that the disease is more frequent in this country than in Europe.

GENERAL OBSERVATIONS.

It attacks people in all spheres, the rich as well as the poor, and may appear at any period of life from infancy to old age. Males and females are affected in about like proportion, although extended statis-

¹ Some of the complications of eczema have been specially studied by A. Broca, in his work "*Études cliniques sur quelques Lésions cutanées des Membres variqueux (eczéma-syphilis-ecthyma)*." Paris, 1886.

² Bost. Med. and Surg. Jour., Jan. 27, 1876.

³ American Practitioner, May, 1875; also, Eczema and its Management, New York, 1881.

⁴ Lancet, Nov. 11, 1871.

⁵ Neumann's Lehrbuch der Hautkrankheiten. Wien, 1876.

ties prove it to be somewhat more frequent in males. In some cases it is hereditary, the term being used to indicate that a predisposition to its development is handed down from parent to child. But, on the other hand, in the majority of cases no hereditary taint is to be detected. All temperaments do not seem to be equally liable to the disease, for individuals with light hair and florid complexion suffer more frequently than those with dark hair and dark skin. There are, moreover, certain persons so peculiarly constituted that their skin is ever ready to manifest signs of eczema upon the slightest provocation, whether this be in the form of internal or of external irritants. Thus, it is well known that in some people local irritants invariably tend to bring out eczema, while the same kind and degree of irritation upon others produce at most a simple dermatitis, which passes away completely with the removal of the cause. In like manner, in these cases, internal derangements of various kinds are often sufficient to cause eczema to appear, while, as we are well aware, no amount of like irritation in another class of persons will occasion the least sign of eczema. It may be stated, then, that there seems to be a certain inherent peculiarity of the skin or of the constitution in some, which, under favorable circumstances, encourages the appearance of the disease. The causes of the disease may be properly regarded under two headings, constitutional, or general, and external, or local, although it must be borne in mind that no sharp line can divide them, for with our imperfect knowledge they often seem to encroach upon each other or to be complicated.

CONSTITUTIONAL CAUSES.—Here are to be found many conditions which are capable of giving rise to eczema. They play an important part in the production of the disease, and, having called it forth, exert a powerful influence in keeping it up. Chief among these rank disorders of the digestive tract. Dyspepsia (the term being employed in its broadest sense), with its long train of varied symptoms, is to be regarded as one of the common causes. Constipation, irregular action of the bowels, flatulence, dyspepsia of the stomach and intestine, and other similar states, are frequently the exciting causes of the eruption. Deficient excretion, through the various emunctories of the body, is also to be regarded as a cause. In certain individuals the presence of an excess of uric acid and urates in the system is sufficient to produce and to keep up eczema.

DEBILITY, DIET, AND OTHER FACTORS.

As causes of eczema, certain distinguished writers have long insisted upon the following general conditions. Erasmus Wilson considers that it is due to "constitutional or general debility," which may present itself as "assimilative," "nutritive," or "nervous" debility. Other observers consider that "perverted innervation" is to be viewed as the chief cause; others, again, that it is due to the "strumous" or "scrofulous"

state. These statements, in the opinion of the author, all contain important truths, and represent certain clinical and practical observations. While they apply to some cases of the disease, they do not reach all, nor do they touch the disease itself, which as regards etiology is doubtless a complex one. Improper food, either as to quantity or as to quality, acts as an exciting cause, and furthermore, by inducing an impoverished, debilitated state of the system, may be a direct cause. Insufficient food and errors in diet, long continued, have much to answer for in bringing about defective nutrition of the integument and, secondarily, eczema. This remark is applicable in the case of both adults and infants, but is especially true concerning the latter, in whom the continued use of unsuitable diet frequently leads to disturbance of the general health and sometimes to eczema. In the case of infants and children, the number of causes, proximate and remote, capable of giving rise to the disease are more numerous than in the adult. The immature and succulent condition of the skin, its tendency to become hyperæmic or turgescient on slight provocation, its thinness, and the activity of the glandular secretions, are all favorable conditions for its development by such exciting causes as irritation from bathing, water and soap, rubbing, and heat and moisture induced by injudicious clothing. In addition to these local causes, the many internal sources of irritation in the circulatory and nervous systems, which are so readily impressed at this stage of life, are potent factors in determining the disease to manifest itself. In certain cases, PREGNANCY and the period of LACTATION possess a decided influence in calling forth the disease. In the same way, all causes which tend to lower the average degree of health may serve as generators of eczema. It is in this sense, the author believes, that debility, nervous exhaustion, excessive mental or bodily work, and kindred states and causes, may act with manifest force in producing the disease.

EXCRETION, URIC ACID, GOUT, AND RHEUMATISM.

As Haig¹ has shown, the effect of excess of uric acid in the blood is deficient and incomplete combustion. In most cases the condition characterized by slow pulse, scanty urine, more or less headache and mental depression, and faulty metabolism. Garrod² and Haig agree that the excess of uric acid in the blood and in the body is seldom due to increased formation, but in most cases to retention or failure of excretion. In this connection two important observations of Haig concerning the causation of disease by uric acid may be referred to: first, that uric acid taken by the mouth passes into the blood, and that if this fluid is kept in a condition to hold it in solution it will remain in the blood till the kidneys have time to pass the whole of it into the urine; so that of, say, twelve grains taken by the mouth, ten or eleven grains

¹ Uric Acid as a Factor in the Causation of Disease, 3d edition. London, 1896.

² Treatise on Rheumatism and Rheumatoid Arthritis. London, 1890.

can be obtained from the urine within three or four days after it has been swallowed ;¹ and, secondly, that uric acid when present in excess in the blood affects its quality, producing the changes met with in anæmia, paroxysmal hæmoglobinuria, and other diseases.

The association of gout and rheumatism with eczema has long been recognized. The presence of the gouty vice disposes to attacks of eczema.² The subject has been dwelt upon by English writers especially, in whose country, as is well known, gout is a more frequent and violent complaint than elsewhere.³ In the United States it is frequently observed assuming more insidious forms. To some of these the term gout is not generally applied, and hence the gouty state has not been fully appreciated as a factor in cutaneous disturbance. Cases are sometimes met with where persons have experienced violent attacks of gout in the form of general constitutional disorder who were relieved immediately on the eruption of eczema, and who remained free of the constitutional gout until the cutaneous disease disappeared. The cause in these cases is doubtless an excess of uric acid in the blood, a view which has long been upheld by such writers as Golding Bird, Mapother, W. Roberts, and others,⁴ and more recently has been insisted on by Garrod and Haig. Numerous English observers have obtained uric acid and urates from the fluid discharge, and it is well known that these substances are apt to be increased in amount in chronic squamous eczema. Bird in his "Urinary Deposits" states that he has more than once observed patients "bedridden with chronic rheumatic gout whose legs were covered with an eczematous eruption, and the parts on which the exudation from the surface had dried had been actually frosted with microscopic crystals of urate of soda." In the acute stage of eczema, according to Mapother, the uric acid would be decomposed during the inflammatory process ; in the chronic this insoluble and therefore irritating product would keep up, if it did not locally originate, the disease. It must not be forgotten that uric acid does not act on litmus paper as an acid, and that this test is no proof of the absence of the acid in eczematous fluid, which is usually alkaline. Gouty eczema in its pronounced form often makes its appearance independently of local irritation, is usually sym-

¹ Journal of Physiology, vol. xv. p. 167.

² See articles by L. D. Bulkley "On the relations of the urine to diseases of the skin," Arch. of Derm., Oct. 1875, and on the "Gouty state in diseases of the skin," Amer. Practitioner, Nov. 1877.

³ The French term *dartre* and the expression *diathèse dartreuse* both convey an idea of a similar general or constitutional disturbance upon which the eruption is dependent. The same idea finds expression among English-speaking people by "heat in the blood," indicative of nervous and vascular changes affecting the integument and other organs, and also the economy as a whole. The expression, however, is more vague than *dartre*. As such terms are not scientific, and have no definite meaning, their use should be discouraged.

⁴ For further information see Duckworth's Treatise on Gout, London, 1889 ; and Garrod, Trans. Internat. Med. Cong., London, 1881.

metrical, and tends to relapse. It, moreover, may not infrequently be traced through several members of the same family and to ancestors, being plainly a manifestation of constitutional disturbance. The skin is weak and irritable and breaks down readily into an eczematous patch upon exposure to exciting local causes, or even without such irritation.

SUGAR, ALBUMEN, ARSENIC AND OTHER DRUGS.

Sugar and albumen in the urine, especially the former, are also sometimes met with in chronic eczema, especially in elderly persons of sedentary habits who partake largely of animal food. Diabetes mellitus as a cause of eczema, especially the chronic form, has been referred to in particular by such well-known writers as Hicks and Liveing,¹ of London, and Hardy, of Paris, who seem to regard the condition as a not uncommon occurrence. In this country, so far as my own experience goes, it is a rare cause of general eczema.

Wyss,² of Geneva, in an article on "nephritic eczema," has directed special attention to the relation of the kidneys to eczema. In these cases the microscope and chemical examination will show cylindrical casts and more or less albumen. The eczema instead of being merely a local and primary affection thus becomes a symptom of a deep-seated and grave disease. Sometimes eczema is provoked by the administration of drugs used as medicines internally; of these arsenic and iodide of potassium especially may be mentioned. Borax is also known to be capable in some cases of calling forth an eczematous eruption.

LOCAL CAUSES.—These are numerous, and are worthy of careful investigation; they play a conspicuous part in the production of many eczemas. In some cases the disease resulting therefrom proves to be a genuine eczema (*ECZEMA VERUM*), in others a *DERMATITIS ECZEMATOSA ARTIFICIALIS*. They comprise various cutaneous irritants and poisons.

MERCURY AND OTHER DRUGS.

The preparations of mercury are capable of giving rise to eczema, especially in those predisposed to the disease, as is seen in so-called *ECZEMA MERCURIALE*, which occasionally results from the excessive employment of mercurial frictions, as well as from the use of applications and dressings containing mercurials. Certain other substances, as croton oil, tincture of arnica, tincture of cantharides, mustard, antimonial ointment, sulphur, and turpentine, all may give rise to a true eczema, or to a *dermatitis eczematosa artificialis*, as the case may be. Iodoform is known to act as an irritant to some skins and to provoke an eczematous eruption, and dye-stuffs, especially those containing aniline, may also be mentioned as at times occasioning the disease. Artificial eczema and

¹ Lancet, March 12, 1881.

² Fortschritte der Medicin, No. 10 (May 20), 1887; abstract in Lond. Med. Rec., August 13, 1887.

dermatitis resulting from such local irritants as carbolic acid, corrosive sublimate, and iodoform, generally appear from twelve to twenty-four hours after exposure, and upon other regions as well as the hands. An idiosyncrasy to their manifestation may be acquired late in life, for they often appear upon persons who previously had not been subject to such irritation of the skin. Not infrequently the lesions are papular.

POISONOUS PLANTS.

The effects resulting from contact with the poison-vine (*Rhus toxicodendron*) and the poison-tree (*Rhus venenata*) are well known. These plants illustrate forcibly the virulent influence which certain vegetable substances are capable of exercising when brought into contact with sensitive skins. The condition produced by these poisons, while generally a peculiar multiform dermatitis, is sometimes an artificial eczema, which may be of an erythematous, a vesicular, or a pustular character. It will be noted that the author distinguishes dermatitis from artificial eczema. It is well recognized that certain persons are always attacked when they come in contact with these plants, while others are able to touch and handle them with impunity, the skin in the latter cases being altogether insensible to their deleterious influence. Some other poisonous plants act similarly. These observations demonstrate the great difference which exists in the degree of sensitiveness of skins, and aid in explaining the whole subject of local artificial eruptions.¹

HEAT, COLD, SEASONS.

Heat and cold likewise have a share in some cases in the production of eczema. The heat of the sun upon parts exposed for some time to its action may cause an eczematous eruption, which is designated *ECZEMA SOLARE*. Excessive perspiration, with elevation of temperature, occurring about the genitalia and other localities where the skin inclines to form folds, may also occasion abrasion of the epidermis, chafing, and eczema, called *ECZEMA INTERTRIGO*. Eczema may similarly follow the inflammatory disorder of the sweat glands known as miliaria, or prickly heat, when this latter affection is prolonged and subjected to exasperating agencies, as friction and irritants.

In this connection reference may be made to the influence of the seasons upon eczema. The disease is found to be of much more frequent occurrence in winter than in summer. Cold is a potent factor in the production of eczema. It also aggravates the disease, by acting as a local irritant, and particularly by interfering with the processes of metabolism and excretion. Many examples of chronic eczema recover spontaneously during the summer season, often, however, only to reappear with the winter. Sudden changes in the weather, especially from warm to cold, generally aggravate these eczemas. Sometimes they are observed to be controlled in a remarkable manner by the seasons.

¹ For further remarks on this subject, see Dermatitis.

WATER, SOAP, AND OCCUPATION.

Water is in almost all cases an irritant to eczematous skin, and under some circumstances will even call forth the disease. When the morbid state of the epidermis and the part it plays in this disease are considered, the reason becomes obvious. In skins predisposed to eczema, baths, water dressings, and fomentations may all produce the eruption. The injurious action of alkalies and acids, in one form or another, may also be mentioned. Strong soaps are deleterious to many skins, and may produce harshness, chaps, fissures, and eczema. It is in place here to make mention of the discutient effects often resulting from the improper use of *sapo mollis*, or common soft soap. This substance is a useful remedy in the treatment of certain varieties and stages of eczema; but it is also a mild caustic, capable of making mischief when injudiciously applied. Dermatitis and even artificial eczema may follow its imprudent use. Eczema has been noted to be due to the irritating influences attendant upon certain occupations. Thus, workers in galvanometallic plating establishments, and bleachers and spinners of flax, are liable to certain forms of eczema and dermatitis, as has been shown by Blaschko,¹ Leloir,² Lefebvre,³ and Purdon.⁴ Other trades also favor the production of eczema.

PARASITES AND SCRATCHING.

Two other important sources of eczema remain to be noticed, namely, parasites and scratching. The animal parasites demand particular attention, the *pediculus* and the *sarcoptes scabiei* being most prominent. Pediculi, especially those of the head, give rise to much disease upon the scalp, and are to be regarded as the cause of a not inconsiderable amount of eczema capitis in children. Of a like character is the inflammation of the skin produced by the ravages of the itch mite: the condition here differs but slightly from eczema vesiculosum. The extent to which micro-organisms, such as the *staphylococcus pyogenes* or *cereus*, invade the excoriated surface in vesicular and pustular eczema is not as yet fully determined. Clinical experience has not shown that micro-organisms are equally deleterious in all cases, nor that they are always causative in their action. They, however, modify the eruption and produce various secondary changes. When it is considered that many harmless micro-organisms have been found upon the skin in health and in disease, too much stress as etiological factors of the process in the beginning should not be placed upon their presence. They play a more important part in the pustular variety than in any other. Scratching is a significant

¹ Deutsch. Med. Wochenschr., Nr. 45, 1889.

² Annales de Derm. et de Syph., tome vi., No. 3.

³ Brit. Jour. of Derm., vol. i. p. 140, abstract from Thèse de Lille, 1888.

⁴ Brit. Jour. of Derm., March, 1891, p. 82.

factor in the production and spreading of eczema, as noted in scabies and in pediculosis, and also in the disease due to other causes. Eczema tends naturally to spread, and where the process is excited by such local stimulants as scratching and rubbing it takes on additional activity, and, as a rule, rapidly encroaches upon new territory. Scratching, moreover, is a ready and common means of conveying micro-organisms of all kinds into the skin.

DENTITION, VACCINATION.

Various kinds of internal irritation, such as ascarides or tæniæ in the bowel, may also sometimes determine an eczematous eruption. DENTITION may operate as an exciting cause and occasion the disease to appear in infants who are predisposed to it. It is to be viewed in the light of a cause in the same way as any other source of local or general irritation. The process is one which not infrequently creates considerable systemic disturbance, and in all cases aggravates a previously existing eczema. VACCINATION likewise at times calls forth an outbreak of eczema, but this occurs, as a rule, only in those who have already a tendency to the affection. On the other hand, vaccination sometimes acts as a therapeutic agent and cures the disease.

NERVOUS SYSTEM.

The relation of eczema to the nervous system is a question which is well worthy of attentive study. Clinical observation teaches that the disease is induced and kept up by numerous and varied causes more or less intimately associated with this great governing system. The abundant supply of nerves terminating in the upper layers of the integument in the form of special nerve-endings or as filaments, and the influence of the vaso-motors on the blood-supply and the nutrition of the skin, especially through the great sympathetic, are potent factors in determining disease to attack the skin. Nervous exhaustion, or neurasthenia; shock to the nervous centres, and a lowered or depressed state of the nervous system; neuroses of functional or organic origin, and reflexes, are all capable of causing, and exerting a direct influence upon, eczema. Clinically cases illustrative of all these forms of the disease are not infrequently encountered, although they are liable to be overlooked by the casual observer, who perhaps sees nothing in such cases beyond the inflamed skin. A striking instance of emotional shock causing eczema is recorded by R. W. Taylor,¹ of New York. A lady, aged thirty-six, of fine physique, never before sick, married, mother of one child, was suddenly informed of the death of her husband. She fainted, and when restored to consciousness noticed a burning sensation of the whole face and neck. No local application had been made while she was in the faint. Within a few days erythematous eczema set in, and ran a

¹ J. William White's article, "The Supposed Curative Effect of Operations *per se*," in *Annals of Surgery*, August and September, 1891.

very severe course, leaving her with a tendency to scaling eczema of the ears ever since. Cases of this kind are also quoted by Meyer.¹

INJURIES TO NERVES, AND REFLEX ECZEMAS.

Injuries to nerves and neuralgias may also give rise to eczema, and especially to eczematoid dermatitis. Thus, Bowlby² gives a colored plate showing upon the backs of fingers and knuckles a marginate eczematous eruption in a case of multiple neuritis following an injury to the back, which I should look upon as an example of eczematoid dermatitis rather than as an eczema. Eczema rarely follows the course of nerve tracts, but occasionally such an occurrence is reported, as in a case of which Shearer³ has given the notes. Arnozan⁴ reports a case observed by Brouardel in which an eczema appeared upon the course of the radial nerve following a violent contusion of the shoulder. The subject was a man of sixty, who had never had eczema before, and who was cured in two weeks of the disease of the skin without relapses. The subject of reflex eczemas occupies a broad field, in which are to be included some of the causes mentioned, as well as others more obscure in their nature. Kroell⁵ has contributed the histories of several cases bearing upon the production of the disease through reflex action. In such instances the disease seems dependent upon a local irritation, as a boil, a burn, or tincture of iodine, the eczema usually first manifesting itself about the seat of the irritation, and subsequently involving near or remote parts, symmetrically or unilaterally. It is due to reflected irritation of the trophic nerves, as in the case of some of the neuro-pathic vesicular and gangrenous dermatitides.

Occasionally cases are met with in which there exists a direct relation between certain internal organs that may be displaced, which probably act as sources of irritation to nerves or plexuses, as in uterine displacement. Abramitcheff⁶ reports the case of a woman thirty years of age who had had an eczema of thirteen years' duration rebellious to treatment. It was discovered that she possessed a movable kidney, and that after she had been provided with a suitable belt the eczema disappeared, but that if the belt was left off for some days the eczema recurred.

In this connection the subject of HYSTERICAL ECZEMA may be referred to. Cases of this disease are rare, and, as Gilles de la Tourette⁷ has pointed out, are usually peculiar in that the lesions are varied or mixed, and confined to a single locality, as the ear or the hand. Vesicular lesions

¹ Influence des Émotions morales sur le Développement des Affections cutanées, Thèse de Paris, 1876.

² Injuries and Diseases of Nerves, p. 482, Plate X. London, 1890.

³ Glasgow Med. Jour., Feb. 1885.

⁴ Des Lésions trophiques consécutives aux Maladies du Système nerveux, Thèse de Paris, 1880.

⁵ Berlin. Klin. Woehenschr., Nr. 18, 1883, and Nr. 40, 1885.

⁶ Jour. des Mal. Cut. et Syph., Nov. 1894.

⁷ Traité Clinique et Thérap. de l'Hystérie. Paris, 1891.

are infrequent, especially as compared with bullous, papular, or urticarial lesions. The pathogenesis of hysterical eczema is probably identical with that of œdema and pemphigus due to hysteria. Oulmont and Touchard¹ have also shown that a variety of lesions may exist upon the skin in the same subject when due to hysteria. In some cases cutaneous anæsthesia exists. Thus, Nikolski² has observed twelve cases of chronic eczema in hysterical subjects accompanied with anæsthesia of the skin, nine of which occurred in men, and three in women. The seat was in most cases the hand, and the disease was usually symmetrical.

RELATION TO PSORIASIS, SYPHILIS, SCROFULOSIS, AND MALARIA.

The relation of eczema to psoriasis in some cases is striking. Thus, we occasionally meet with instances in which the two diseases coexist; other cases in which the subjects are liable to attacks of either disease, showing at one time eczema, at another psoriasis;³ and, finally, cases in which eczema follows psoriasis.⁴ Eczema is peculiar in being one of the inflammatory diseases of the skin which is rarely simulated by syphilis, nor is it produced by the syphilitic virus, and therefore the question of a "syphilitic eczema" is seldom discussed. Occasionally we note syphilis and eczema occurring together, one disease complicating the other, but the occurrence is rare in my experience.

That a relation in some cases exists between eczema and scrofulosis is shown by the observations of Lailler⁵ in the St. Louis Hospital, Paris: he noted manifestations of scrofulosis 161 times among 1760 cases of eczema; and in 106 of these cases the scrofula appeared to exert a direct influence upon the production of the eruption.

Eczema and eczematoïd dermatitis are sometimes due to malarial poisoning. The lesions in such cases are usually not so well defined, nor so characteristic of eczema, as when they are due to other causes. There may be no history of intermittent fever, but other symptoms of paludism generally exist. The cutaneous lesions, as a rule, become aggravated in the form of local congestive attacks lasting a short period. Most of such cases are remarkable in that they yield promptly to quinine and arsenic, and that relapses and recurrences are likewise controlled by these remedies.

CONTAGION.

Simple eczema, uncomplicated, is not contagious. Instances are rare in which common eczema or any other cutaneous disease has been ac-

¹ Contribution à l'Étude des Troubles trophiques dans l'Hystérie. La Médecine Moderne, Nr. 7, 8, Fév. 12 et 19, 1891.

² Rev. Neur., 1894, p. 628; quoted from Gilles de la Tourette, p. 431, Partie II.

³ See Piffard, *Materia Med. and Therap. of the Skin*, p. 126. New York, 1881. Also Campbell, *Arch. of Derm.*, July, 1877.

⁴ See Neumann, *Allg. Wien. Med. Zeitung*, Nrs. 1 und 2, 1877; also *Viertelj. für Derm. u. Syph.*, 1. und 2. Heft, 1877, p. 262.

⁵ See Sanglé, "Étude sur l'Eczéma scrofuleux," Thèse de Paris, 1880.

quired from coming in contact with or handling eczematous lesions or the discharge. Where contagion has been proved it may generally be assumed that complications have existed, that other diseases, for the most part microbic in nature, have become engrafted on the eczematous lesions; but such instances, as stated, are seldom encountered. The subject is discussed elsewhere in this chapter and in that on the pathology of the disease. So-called "epidemic eczema" and other epidemic and contagious eczematoid diseases are referred to under the caption of "dermatitis epidemica," where they properly belong.

RELATION TO THE MUCOUS MEMBRANE, AND CATARRHAL NATURE.

The relation of eczema to inflammations of the mucous membrane is in some cases intimate, especially in the young and in the old, as shown by eczema being replaced by bronchial inflammation, asthma, or cystitis, or by the occurrence of the cutaneous and the mucous affection simultaneously. This clinical observation has led some authors to regard the disease as being of a catarrhal nature. Viewed in this light, for some cases, there can be no objection to the theory. There are no convincing observations to show that the skin is affected in eczema as the mucous membrane is in bronchitis, or that the two affections are in all cases due to the same causes. Nor are they amenable to the same class of remedies. That they sometimes have certain obvious analogies in common, and that they may even replace each other at times, will be granted, but these reasons are hardly sufficient for regarding them as identical. Etiology alone does not constitute a disease. Even if it be admitted that some cases are catarrhal, all cases are not so. If eczema may be considered as being catarrhal, certain other similar inflammations of the skin, as, for example, psoriasis and dermatitis exfoliativa, might with almost equal propriety be looked upon in the same light. The term catarrhal, as applied to the skin, is not sufficiently specific in its meaning.

Pathology.—The nature of the disease has already been referred to in considering the etiology. As has been stated, some observers incline to regard the process as catarrhal, and as being analogous to similar affections of the mucous membranes, as illustrated in bronchitis. While for some cases the analogy may exist, I hold the opinion that as the cutaneous disease manifests itself with distinctive features, which are in many respects different from those manifested on the mucous membrane, it is well not to insist too strongly on this point. While, therefore, attention may be called to the observation, in the light of our present knowledge but little proof in favor of the statement as applicable to all cases has been brought forward. Nor, on the other hand, even if we admit that the disease is catarrhal, has our knowledge much advanced. If squamous eczema be regarded as a catarrhal disease, psoriasis and other similar diseases may with almost equal propriety be admitted to this group.

In eczema the skin is weak, whatever may be the cause of this state. This is evident from the readiness with which it gives way to the many kinds of cutaneous irritants, both local and internal, which may induce or excite the disease. There exists in the eczematous skin a lack of resisting power to influences which in the normal integument exert no injurious effect. The tendency of such skins, or of skins in this peculiar state for the time being, to take on eczematous inflammation whenever influenced by irritants of various kinds, indicates a weak, debilitated condition of the organ. The causes giving rise to this state are varied, but in some cases imperfect nutrition and defective innervation may be regarded as direct factors. In eczematous skin, where the eczema habit prevails and persists, there is no disposition for the organ to regain its normal equilibrium after shock or injury, but, on the contrary, the disease not only sets in but spreads and becomes chronic, showing that the skin lacks power of resistance.

Eczema may be considered from two points of view: one as being a cutaneous disease strictly, the lesion being local and curable by appropriate external remedies; the other as being an expression upon the skin of some general or constitutional disorder, which may be obvious or obscure. In the latter case the affection of the skin may sometimes be regarded as symptomatic of some disease or disturbance of internal organs or of functions, or, it may be, of certain constituents of the economy.

SUPPRESSION AND METASTASIS.

The consequences resulting from suppressing eczema, and from metastasis, have long been the theme of occasional discussion *pro* and *con* among both scientific and other observers. Recently the subject has again been brought forward with affirmative observations by such well-known dermatologists as Brooke,¹ of Manchester, and Brocq² and Gaucher,³ of Paris. Thus, Brocq records a case in which grave cerebral disorders followed the rapid disappearance of a chronic eczema. Gaucher,⁴ after calling attention to the statement made by the distinguished French dermatologist Rayer in his work on diseases of the skin many years ago, that "sometimes it is dangerous to cure eczema too rapidly in the case of infants and old persons," gives his own experience. In a period of two years he has seen in young infants the rapid cure of eczema by mild applications of oil of cade followed by very grave consequences. One of these infants died in convulsions; another died of broncho-pneumonia at the time when the eruption disappeared completely; a third was attacked by a dangerous form of enteritis.

A remarkable case occurring in my own practice, in which it seemed

¹ Medical Chronicle, Dec. 1889.

² Jour. de Méd. de Paris, Nov. 24, 1889, and Brit. Jour. of Derm., Feb. 1889.

³ Brit. Jour. of Derm., Oct. 1889, p. 414.

⁴ Traité théorique et pratique des Maladies de la Peau. Paris, 1885.

to me metastasis took place, may be recorded. The disease was a persistent, virulent, pustular eczema of the scalp, universal in distribution, occurring in a nun aged nineteen, otherwise in average health, but anæmic. The activity and virulence of the pustulation, and its extraordinary persistence, struck me at the time as being remarkable. The case was under observation for several months, and resisted all treatment with singular obstinacy, no remedies used in any degree influencing the excessive pustulation, which repeatedly, almost constantly, undermined the entire scalp. She was confined to the room, but nevertheless suddenly contracted an ominous pneumonia with œdema and died in a few days, the eczema having rapidly disappeared with the advent of the pneumonia. Cases of this kind, it should be stated, are very rare.

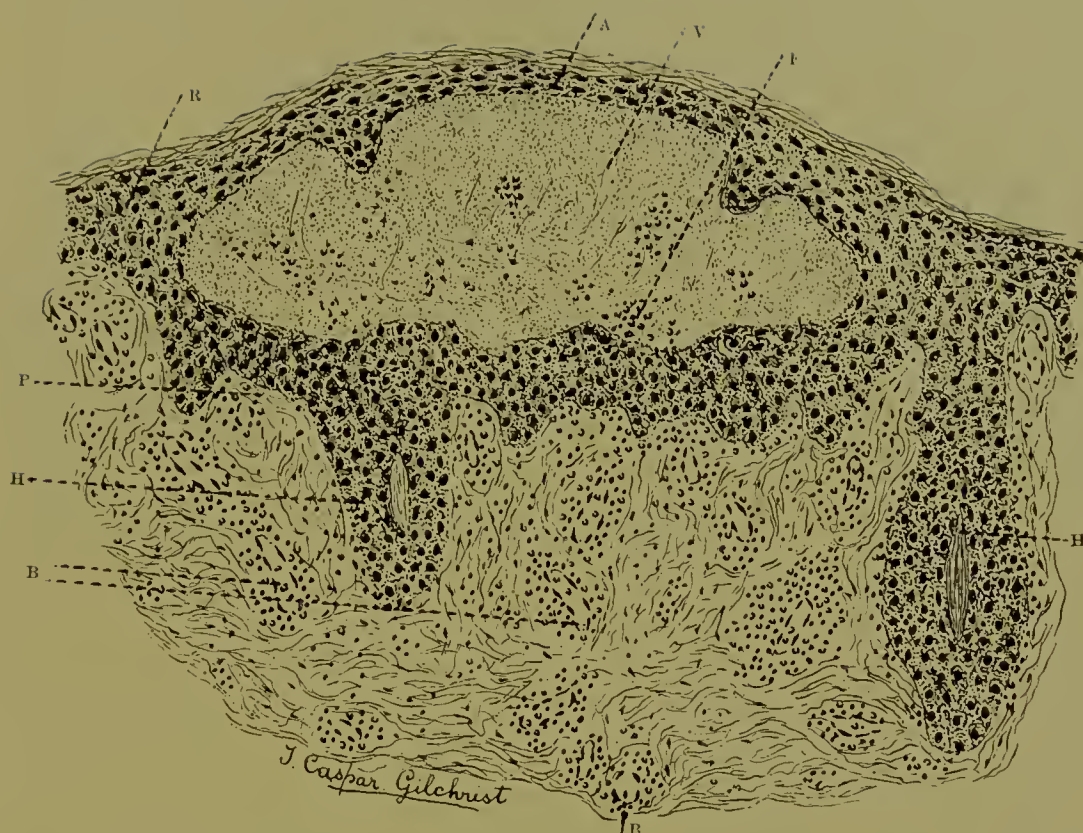
The subject of the invasion of the body by cocci from the skin in eczema is one of interest, and has a bearing upon metastasis. There is no reason to doubt that the body may be attacked in this way, although few instances are recorded. The following case, reported by Bernheim,¹ may be quoted. The subject was an infant, aged four months, with very extensive eczema, who died from the disease of the skin. The autopsy revealed acute enteritis, swelling of the spleen, parenchymatous changes in the liver, and œdema of the lungs, and the reporter is of opinion that the cocci present in the various parts of the body entered by the skin, and that the fatal ending was due to septic intoxication by the products of the microbes. The cocci could be traced through the corium to the subcutaneous tissue and lymphatic spaces, in which they were found abundantly. A sudden termination in infants affected with eczema has also been described by O. Wyss.

Considering the possible connection between eczema and bronchitis, as now and then observed, and that these diseases may occur together or may manifest themselves alternately, it may be stated that the percentage of patients with eczema who suffer from any internal complications following its suppression is extremely small and is not to be taken into consideration in the treatment. The liability to such results depends upon a complication, or, it may be, upon an idiosyncrasy of the patient. As Gaucher points out, metastasis is most liable to occur in infants and elderly people and where the disease of the skin is diffused over the greater part of the general surface. But practically, as already stated, the question presents no obstacles to the proper treatment with local remedies, looking to as speedy a cure as possible. This whole subject comes forward prominently in another form in considering the relations of gout to eczema.

COURSE OF THE DISEASE.

The course of the disease is an important factor in the pathology of eczema, for the reason that according as this is acute, subacute, or

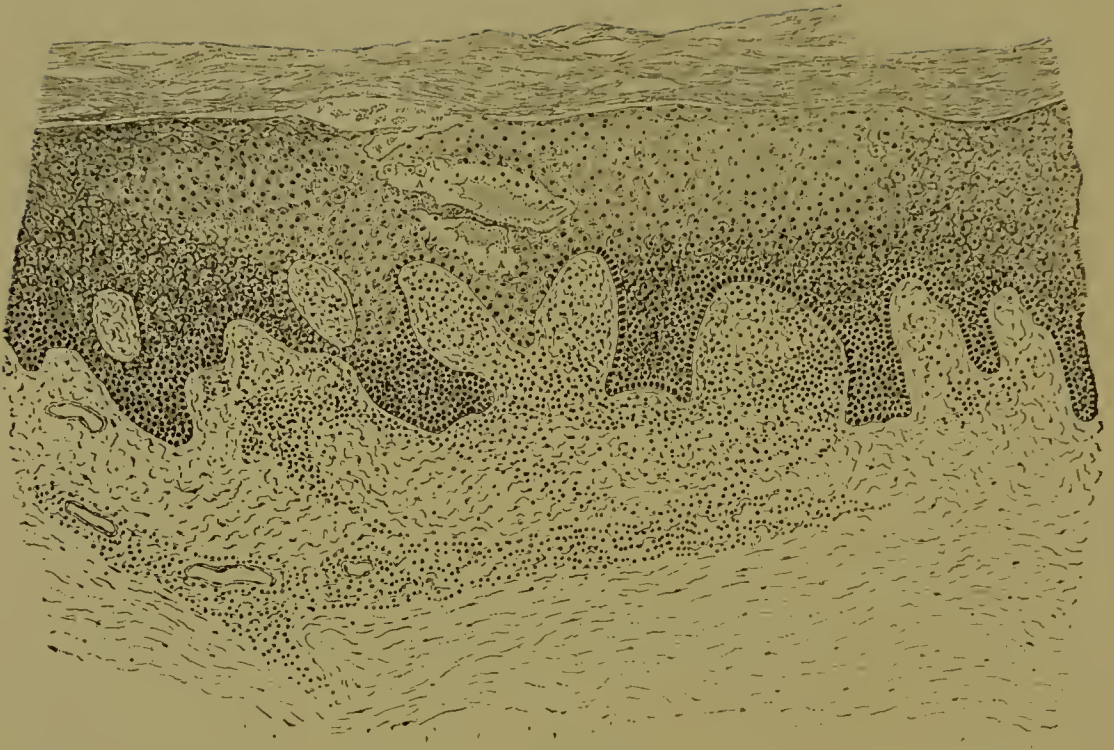
¹ Centralbl. für Bakteriöl., Feb. 5, 1894.



ECZEMA.

VESICULAR VARIETY.

A small pin-head sized, clear, tense vesicle was excised from the tip of the right ear. The vesicle was surrounded by a slight area of inflammation. In the same patient there were other distinct evidences of eczema vesiculosum et pustulosum, with crusts around the ears and neck. The vesicle (v) is seen to be situated in the middle of the stratum mucosum (R), and took its origin therefore in this layer. The contents of the vesicle consisted of numerous polynuclear leucocytes (horseshoe-shaped in the drawing), a few detached epithelial cells, some strands of fibrin, and a large quantity of coagulated albumen (serous exudation); very few round, mononuclear cells were seen in this region. The epidermal cells forming the roof (A) of the vesicle were swollen and were elongated; the interepithelial spaces were also much wider than normal. Numerous polynuclear leucocytes had invaded the epidermal floor (F) of the vesicle, and particularly the epithelium of the hair-follicles (H), which were also much swollen. The corium, especially the upper portion, showed marked evidences of acute inflammation. The papillae (P) were swollen and infiltrated with polynuclear leucocytes. The blood-vessels (B) were all markedly dilated, and contained and were surrounded by numerous polynuclear cells. Mononuclear (lymphoid) cells were also numerous, especially in the neighborhood of the vessels. One hair-follicle (H) was implicated in this vesicular formation, but the sweat-ducts were unaffected. Magnified about 100 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)



ECZEMA.

VESICULAR VARIETY, NEURITIC TYPE.

Section from palmar surface of a finger. The corneous layer shows lacunæ, due to the separation in places of the strata. This is not necessarily a part of the process of eczema at this stage, but is usually present in later stages. The stratum lucidum is ruptured at one place above the vesicle *a*, and a space containing serum and a few leucocytes is seen; *a* represents the earliest stage at which a vesicle is observable. The vesicle lies in the mucous layer. The contents consist of serum and leucocytes. In this section the coagulated albumen is well shown. The vesicle forms by transudation from the blood-vessels into the mucous layer at a given point and pushes the cells apart, compressing them and causing them to elongate. In this drawing the mucous layer beneath the vesicle shows signs of oedema, and this occurs in a considerable area around the vesicle. The cell body undergoes molecular changes and does not stain well. The lighter part of the mucous layer in the drawing shows the extent of this molecular change and corresponds to the area of inflammation in the papillary layer of the corium. The papillæ show marked serous transudation, dilated blood-vessels, and invasion of leucocytes. The limit of the process is tolerably well defined, both in the corium and in the epidermis. (Dr. A. R. ROBINSON'S section, drawing, and description.)

chronic, the changes in the skin vary. The process may pursue its course acutely, whether the lesions be erythematous, papular, or vesicular, in which case it will be confined to the upper strata; or it may assume sooner or later a distinctly chronic form with secondary changes, and in some cases with varied complications. The tendency of the process is to diffuse itself over a considerable area superficially rather than deeply. The course may be typical, or, as is more frequently the case, atypical and irregular, characterized by a distinct tendency to relapses and recurrences at longer or shorter intervals. The secondary changes are varied, consisting especially of the products of inflammation due to circulatory disturbance of the blood and lymph, exemplified by engorgement and thickening of the papillary layer and even of the whole corium.

GENERAL OBSERVATIONS ON THE PATHOLOGICAL ANATOMY.

The subject of the pathological anatomy of the disease is difficult to compass, because of the large number of forms and varieties, and especially the stages of the process, that occur. It is a disease that tends to change constantly, to move and shift, and therefore to vary in its evolution and involution. Viewed as a whole, it is unique, differing from all other forms of cutaneous inflammation. Especially important is it to distinguish the acute from the chronic form, the pathologico-anatomical changes being peculiar and different in each. The clinical varieties, whether erythematous, vesicular, pustular, or papular, are also to be taken into consideration. The alterations which occur are mostly in the epidermis and in the upper strata of the corium, both of which structures are capable when subjected to prolonged eczematous irritation of manifesting extensive and varied pathological changes. Secondarily there occurs more or less stasis in the deeper structures of the skin, with consequent connective-tissue hyperplasia and condensation, producing marked thickening and sclerosis. It is characteristic of eczematous skin, in both the acute and the chronic stage, that the blood-vessels and lymph-vessels are always dilated.

ALTERATIONS IN THE EPIDERMIS.

The alterations in the epidermis are peculiar, and are essential to the existence of eczema. Heretofore too little attention has been bestowed upon the important and characteristic changes which occur in the mucous, or germ, layer. In no other affection of the skin does the epidermis suffer in the same manner. The epidermis in all varieties of the disease is affected in a positive and marked degree, whether the process manifest itself as a moist or as a dry eruption. The disease having its seat primarily in the papillary layer, the epithelium of the interpapillary spaces is simultaneously involved, and plays an important part in the pathology. The changes which take place vary with the form of disease, whether moist or dry in type, but consist in the main of increased proliferation,

followed by the breaking down of the continuity of the horny layer, ending in exfoliation, leaving the mucous layer more or less exposed. In moist eczema there may be more or less complete disintegration and separation of the horny layer, leaving the mucous layer bare. These alterations become the more important from the fact that eczema is one of the most superficially seated of the inflammatory diseases of the skin. Clinical studies as well as the microscope show the epidermis to be affected extremely early in the process and to be the seat of active proliferation, with degenerative changes through the whole course of the disease. As Leloir¹ and others have shown, the interior of the individual cells becomes dropsical, their protoplasm breaking down and a cavity forming in its place. There occur in the mucous layer infiltration with migratory cells, œdema, and defective cornification of the cells in the basal stratum, together with diminution or disappearance of eleidin in the granular layer. The cells are defective and are cast off in the form of desquamation or in a disintegrated fluid state mingled with serum, constituting the peculiar eczematous discharge. As Bronson states,² the part that the mucous layer of the epidermis plays in vesiculation aids in explaining the peculiar properties of the fluid exuded from an eczematous surface, differing as it does so materially from ordinary serum.

The changes which occur in the several strata of the epidermis have been investigated especially by Suchard,³ who found that as the vesicle approaches the surface a marked alteration occurs in the stratum granulosum, impairment of which layer is followed by faulty cornification. Gaucher,⁴ who has also studied these changes, states that a reticular mesh-work remains when the vesicle has formed, consisting of the walls of the obliterated cells. The changes in the epidermis as a whole are important, varied, and complex, and have a direct bearing upon the pathology of the disease. The intimate relation between the papillary layer and the mucous layer is made manifest in a striking manner in this disease.

NERVE INVOLVEMENT AND PIGMENTATION.

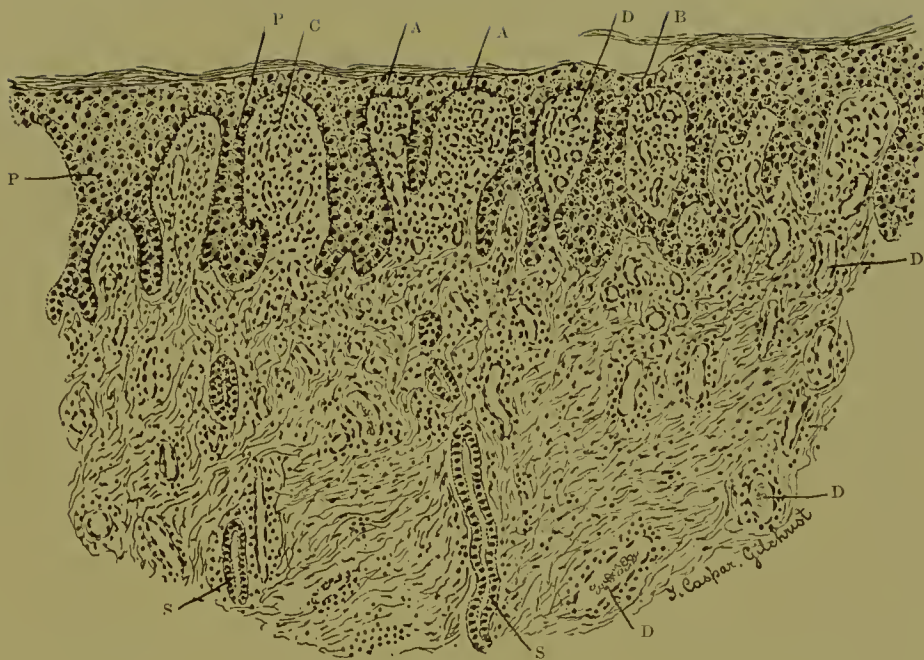
In this connection the abundant distribution of the nerves in the mucous layer should be borne in mind. Sensory disturbance, characterized by itching and burning, and in rare cases even by more or less pain, is a constant feature of the disease, and is indicative of the part played by the nerve filaments and endings. Whether they are primarily at fault in disturbing the nutrition of the papillary and mucous layers

¹ Archives de Physiologie, 1880 and 1881.

² Jour. of Cut. and Ven. Dis., p. 130, Feb. 1883. An excellent article on the pathology and treatment of eczema.

³ Archives de Physiologie, 1882, "De la disparition du stratum granulosum de l'épiderme dans quelques maladies de la peau."

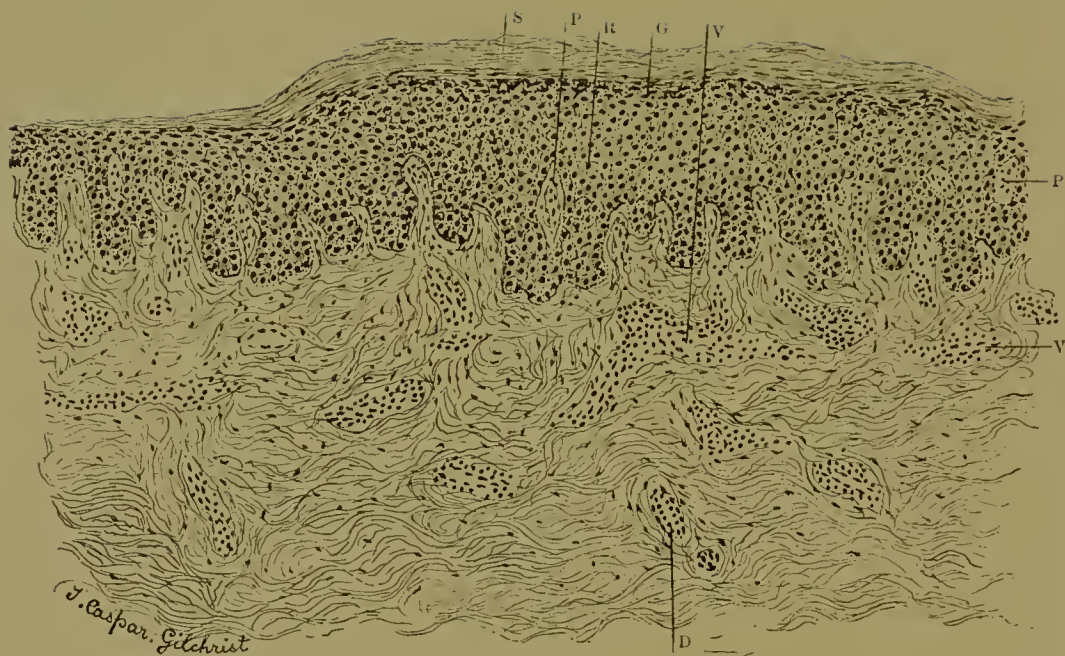
⁴ Annales de Derm. et de Syph., 1881, 2e sér., II.



ECZEMA.

MADIDANS, OR WEEPING VARIETY.

This section is from a case of eczema madidans of the anterior surface of the leg. The skin was of a bright red color, was much thickened, and considerable moisture was exuding at the time a small portion was excised. The section shows marked hypertrophy of the interpapillary processes (P) of the epidermis, but the portion (A) which lies between the papillæ and the surface was very thin in places, and even sometimes consisted of only one layer of cells (B), which, on account of the widened spaces between these cells, allowed serous exudation to flow from the dilated blood-vessels (D) of the papillæ to the surface. A number of polynuclear leucocytes were found wandering through the thinned portions of the epidermis to the surface. The papillæ (C) were much enlarged and contained comparatively numerous dilated blood-vessels (D), besides a large number of small mononuclear cells and a few polynuclear leucocytes, some of which showed fragmentation. The marked dilatation of the vessels (D) was seen throughout the whole corium, extending down to the subcutaneous tissue. Two sweat-ducts (S) were included in the section, but they did not exhibit any pathological changes. The connective-tissue cells were more numerous than normal in the corium, and small mononuclear cells were present in large numbers. The same appearances were seen in portions excised from two other cases of eczema madidans (weeping variety), in one of which (a colored woman) large numbers of mast-cells were distributed throughout the corium. Magnified about 50 diameters. (Dr. T. CASPAR GILCHRIST's case, section, and description.)



ECZEMA.

SQUAMOUS VARIETY, CHRONIC FORM.

From a case of chronic squamous eczema which was situated on the back of the neck of a colored woman. The patch was dry, squamous, and considerably infiltrated, besides being deeply pigmented. The chief features consist in the marked hypertrophy of the epidermis and the chronic inflammatory condition of the upper half of the corium. *s* is the desquamating portion of the horny layer; *G* is the granular layer, which is well marked; *R* is the mucous layer, and is the most hypertrophied portion of the epidermis. A few lymphoid cells have wandered into this layer, as well as numerous pigment-cells. *P, P* are the papillæ of the corium, which are not much altered either in size or in shape. *V, V* are the blood-vessels, which in the upper half of the corium are surrounded by collections of young granulation-cells, as well as numerous mast-cells and pigment-cells. *D* represents a portion of a sweat-duct. The lower half of the corium and the sebaceous glands and sweat glands are practically normal. Magnified about 50 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)

or are deranged secondarily by the infiltration is a difficult question to decide, but I am inclined to hold to the former view. The subjective symptoms play an important part in the disease, for they cause the subject to scratch, thereby setting up additional inflammation, with consequent secondary lesions. Scratching, which in most cases is severe and prolonged, is both directly and indirectly accountable for much mischief. In eczema the nerves are not, as a rule, altered structurally, although even in acute eczema, in exceptional cases, as both Leloir and Colomiatti¹ have shown, the peripheral nerves may manifest undeniable lesions.

Pigmentation occurs in a variable degree, depending upon the stage of the process, the amount of nerve influence and involvement, the local irritation and scratching, and other causes. In most cases, even of chronic eczema, it is not a marked feature, while in the acute forms of the disease it does not occur. In long-continued and chronic eczema of the legs, however, it is often present, usually complicated with discoloration due to venous stasis and changes in the blood-vessels and lymph-vessels, as in chronic ulcers of the leg. In dark-complexioned subjects, however, as well as in distinctly neurotic ones, pigmentation is sometimes marked. The extent to which the nerves and the nervous system generally are implicated has, I believe, much to do with the production of this symptom.

BLOOD-VESSELS, LYMPHATICS, FOLLICLES, AND GLANDS.

The blood-vessels, lymphatics, follicles, and glands of the skin are all considerably involved in the process. The papillæ of the corium become more or less enlarged, and even hypertrophied, owing to the epithelial hyperplasia, while the body of the skin itself becomes thickened and hardened or even sclerosed in certain regions and localities, usually in defined areas or patches, as on the extremities. Œdema of the corium, both acute and chronic, plays an important part in the pathology of the eczematous process. It varies with the subject, with the variety of the disease, and with the region involved. About the face and the genitalia it is most pronounced, the auricles, lips, penis, and scrotum showing, in all cases, more or less swelling and thickening of the integument. The sebaceous glands are affected in a variable degree according to the localization of the process and the form of inflammation present. From observation I am inclined to the view that in most cases they are involved merely as an integral part of the integument. In some cases, however, the process is disposed to attack these organs in a marked degree, as shown by abundant follicular suppuration and also by the exfoliation of dry epithelium, as in the complication known as seborrhœic eczema.

¹ *Traité descriptif des Maladies de la Peau*, par Leloir et Vidal. 3me livraison, Paris, 1891.

The hairs in the usual forms of the disease are not affected and seldom fall, but this accident not infrequently occurs in the deep-seated, chronic forms. Even in these cases, however, the hairs incline to grow in as soon as the disease passes off, so that it may be stated that permanent loss of hair is of unusual occurrence.

MYCOTIC NATURE AND CONTAGION.

The mycotic nature of eczema has been advanced by Unna and others, but as yet, in the opinion of the author, the proof adduced in favor of this view is not sufficient to warrant discussion of the subject here. The disease itself I do not regard as contagious. The presence of micro-organisms in the products of exudation on the surface of the skin, which has been asserted by some observers, by no means proves that it is of microbic origin. It is more than likely that such micro-organisms are adventitious and secondary. From the experiments of Konrad and Buedinger¹ we know that with the advent of pus staphylococci upon a wound, healing by first intention is interfered with, and that staphylococci applied upon the skin cause follicular abscesses, the *S. albus* producing mild irritation, the *S. citreus* deep furuncular and suppurative lesions. In 1887 Bockhardt by his experiments showed that pustules were readily produced by the artificial inoculation of the staphylococcus pyogenes albus and flavus. It is, therefore, easy to comprehend that given a defective, abraded, excoriated epidermis, as occurs in eczema vesiculosum or eczema madidans, pyogenic, saprophytic, and harmful microbes may readily attach themselves to the surface, and thus, under favorable conditions, influence the disease in many ways. This is particularly the case with the suppurative forms of eczema accompanied with crusting. The possible invasion of the body by cocci has already been referred to under the caption of metastasis.

The clinical observations bearing on the subject of contagion are meagre. Where contagion does occur, as has been recorded in rare instances, I believe the disease of the skin to be a complicated one, and not simple eczema. The chronic eczematous skin offers a favorable soil for the attachment and development of micro-organisms; hence their discovery in some cases need excite no surprise, considering that they are found to exist so abundantly in other structures. Competent observers, like Jonathan Hutchinson,² have discussed the question of the contagiousness of the disease, and have quoted instances of what they regard as epidemic eczema. Examples are now and then encountered, especially among the poor and ill-fed, where the disease, possessing some or many of the features of eczema, spreads from one individual to another, but I should be inclined to view such cases as forms of some other disease, or, possibly, as a complication of diseases. Of this nature are some of the cases that have been recorded as "anomalous forms of eczema,"

¹ Wiener Klin. Wochenschr., 1892.

² Archives of Surgery, Oct. 1891, p. 146.

“eczematous dermatitis,” “epidemic eczema,” and the like. They differ from common eczema in important particulars.

ECZEMATOID DERMATITIS.

A few notable instances of eczematoid dermatitis have from time to time been under my observation. The cutaneous disease consists of some peculiar form of inflammation of the skin, local or diffuse, generally the latter, and usually chronic, which takes on a more or less well-marked eczematous character. It differs, however, in many respects from common eczema. Such cases are difficult to classify. Sometimes they represent a low grade of chronic inflammation of an ill-defined character upon which eczematous disease supervenes. A notable case of this kind, occurring in an extremely emaciated, bedridden, middle-aged man, the subject of general severe rheumatoid arthritis, was for a long period under the care of Dr. William Pepper and myself many years ago in the hospital of the University of Pennsylvania. The disease of the skin was characterized by varied elementary and secondary eczematoid lesions, some of which, including the disease of the nails, were distinctly trophic. The patient, after lingering many years, died from marasmus. The disease of the skin persisted year after year, and to the end, without changing its type. Local treatment, varied in character, proved ineffectual. Microscopic examination showed the skin to be the seat of a peculiar degenerative form of inflammation. The cells of the horny layer were in some places dry and exfoliating, in others extremely succulent. The cells of the mucous layer were cloudy and granular, and seemed to be undergoing fatty degeneration. The papillæ of the corium presented a striking picture. They were large and œdematous and densely packed with cells, appearing like huge cellular masses, all normal structure being obliterated. The connective tissue of the reticular layer was atrophic and the seat of cellular infiltration and amorphous molecular debris, the former consisting mainly of corpuscular elements of the blood, and therefore partaking somewhat of the nature of a hemorrhagic infiltration. The arteries, especially of the subcutaneous connective tissue, contained exquisite examples of organized thrombi, with many minute blood-vessels. Marked sclerosis existed between the primitive nerve bundles, causing in some places a disappearance of the primitive nerve fibrils. The disease of the skin in this case, and in other similar instances, may be best described by the name eczematoid dermatitis, or DERMATITIS ECZEMATOIDES.

ACUTE ECZEMA.

Acute eczema, in the beginning, manifests itself in various ways, according to the age, the variety of the disease, the region attacked, and the exciting cause. In infants and children, when the outbreak is sudden and extensive, more or less malaise, chilly sensations, and diges-

tive disturbance, with slight febrile symptoms, may be present. But in the adult it is rare to note much general disturbance. The lesion may be an erythema, a vesicle, or a papule, depending upon the subject and upon circumstances. These elementary lesions are the commonest first manifestations of the disease; but various modifications of them frequently occur, while a mixture of vesicles and papules, constituting a vesico-papular eruption, is also common. Acute vesicular eczema may be regarded as the type of the disease, but it is not so often met with in practice as are some of the less pronounced and more mixed forms of eruption. In the formation of the vesicle, the serum and wandering corpuscles escaping from the vessels force their way into the mucous layer and upward against the resisting horny layer, the result being an accumulation of fluid with altered cellular contents. The cells of the mucous layer participate actively in this process, owing to pressure, irritation, and changes of nutrition, and break down and degenerate into a peculiar fluid substance. It is this product which distinguishes the fluid exuded in this disease from that of other similar forms of cutaneous inflammation.

In connection with the subject of vesiculation, as represented by the typical vesicle, reference must be made to what may be termed diffuse subcorneous vesiculation, where the horny layer is undermined with exuded fluid and is only semi-detached, as occurs frequently in burns or scalds. In this event no distinct vesicles are formed, the process beneath the corneous layer spreading and reaching out laterally rather than upward. Small or large areas of the skin may be affected in this manner, the exudation usually taking place with great rapidity. It is a sign of unusual debility of the skin. In other rare cases the horny layer is separated in a circumscribed form, more or less well defined, constituting a multilocular semi-bullous lesion or even a flat bleb, according to the locality and other influences. In the erythematous variety the vessels in the papillary layer are uniformly dilated, the circulation of both blood-vessels and lymphatics being interfered with.

Pustular eczema in most cases is not so clearly defined, as regards the lesions, as the vesicular variety. All stages between typical vesicles and typical pustules are frequently encountered, constituting vesico-pustules. The changes in the skin consist of a more acutely degenerative kind, the leucocytes undergoing fatty degeneration, while the walls are thicker and tend to rupture less readily. Where the lesions are typical pustules these features are usually even more pronounced, although owing to the activity of the inflammatory process the fluid exudation may rupture the horny layer, the exudation in either event rapidly crusting. The process is one which, whether the form of exudation be vesicular or pustular, may be arrested or modified by a variety of influences at any moment in its evolution, and this peculiarity renders its pathological anatomy subject to variation.



ECZEMA.

ACUTE, VESICULAR VARIETY.

It is confined to the face, especially the lower half, of a young woman. Owing to the abundant vesiculation and the confluence of the vesicles, the corneous layer of the epidermis is undermined with fluid and thrown up, forming a thin superficial crust. On the chin the process is further advanced and crusting consequently more pronounced, the crusts having a honeycomb appearance. Duration six days. Rapid recovery occurred under local treatment in the University Hospital. (The Author's case.)



ECZEMA.

ACUTE, CONFLUENT PUSTULAR VARIETY.

It is confined to the face, ears, neck, and scalp of a middle-aged woman. The lesions tend to undermine and uplift the corneous layer of the epidermis in sheet-form. Duration two weeks. Recovery occurred slowly in this case, the pustular variety ultimately becoming squamous. (The AUTHOR's case, from a water-color drawing.)

Unna¹ employs the term "acute vesicular eczema" to denote the primitive acute outbreak of eczema in the form of vesicles, which as such rapidly heals or passes into the ordinary common chronic eczema. This condition alone is rightly entitled, in Unna's opinion, to be termed acute vesicular eczema. This definition differs from that given to acute eczema by Hebra, who states that it is usually accompanied by œdema and erysipelatous swelling. Unna believes that the latter conditions are sometimes simple traumatic or toxic dermatitis, and that while inflammatory œdema as an accompaniment of eczema is not rare, it is usually secondary. The same author defines the vesicle of acute eczema as being characterized by œdema and hypernutrition, with the formation of mitoses in the surrounding cutis; an exudation more serous than leucocytic; a lack of sharp definition from the loosened vesicular walls; swollen epithelial cells and leucocytes containing morococci (mulberry-like cocci) in the monolocular vesicles; and morococci on the surface and under side of the swollen horny layer.

Stress is laid by Unna on the bacteriological conditions. Bacteriologically two distinct varieties of the eczema vesicle are distinguished. The first is much like that of staphylogenic impetigo, and constitutes, like it, the only pathological change in the skin. Here bacteria—the morococci met with in eczema—are invariably present in the vesicle. But, while the impetigo-like vesicle resembles that of staphylogenic impetigo, there are two fundamental differences between them upon which the histological changes depend,—one being the attraction of a purulent exudation by the staphylococci and of a sero-purulent exudation by the morococci, the other a different relation of the two organisms to the leucocytes.

The second variety is much more polymorphous, and is not the only change in the skin, but is present in addition to other long-standing and characteristic eczematous changes of the epidermis. The vesicles here develop by the ever-increasing congestion of leucocytes and serous transudation. The leucocytes endeavor to reach the corneous layer, but are prevented from doing so by the transitional layers. It does not develop by the sudden penetration of the morococci into the prickle layer. These vesicles, it may be said, as a rule, contain no morococci. They represent the acute and subacute vesicular patches which manifest themselves during the course of chronic eczema on regions already the seat of eczema. They develop gradually and incline to persist.

In the impetigo-like eczema vesicle, owing to the fluid character of the contents, the morococci distribute themselves more uniformly from the beginning, not being collected in a thick stratum beneath the horny layer. But sometimes they are freely distributed all over the periphery

¹ Histopathology of the Diseases of the Skin, translated by Norman Walker. Edinburgh, 1896. The author desires to express his indebtedness to this valuable work in the preparation of this chapter.

of the vesicle ; in other words, they are widely disseminated in clusters. Moreover, while the pus-drop of staphylogenic impetigo in most cases consists of leucocytes only, with but occasionally a small number of horny cells, the sero-purulent vesicle of eczema always contains mixed products, in particular prickle-cells, and mixed with the leucocytes a few horny cells, and sometimes "mastzellen,"—all being more loosely arranged than the pus-cells of the impetigo pustule.

CHRONIC ECZEMA.

While chronic eczema is very often the result of a preceding acute eczema, it not infrequently happens that the process is subacute or chronic from the beginning. The advent of the disease may be gradual, progressing rapidly or slowly from a point until the chronic patch, so often encountered, results, the degree of infiltration being variable. In the chronic form the process passes from the papillary layer downward into and through the body of the corium to the subcutaneous connective tissue. As a result of the process, marked changes in the form of hyperplasia sometimes take place in the corium, and especially in the papillary layer, occasioning considerable thickening of this structure, while in other cases the papillary layer takes on a warty form, the epidermis being much hypertrophied.

There are, following the views of Unna, three elementary forms in the pathological anatomy of chronic eczema, upon which stress must be laid. They comprise CORNIFICATION, or the FORMATION OF SCALE (constituting the "parakeratosis" of Unna and others); the FORMATION OF THE PAPULE, in which exists the abnormal epithelial proliferation or growth (the "acanthosis" of Unna); and the VESICLE FORMATION, or the spongy transformation of the epithelium. It will be noted that each of these forms relates to a special histological process.

The FORMATION OF SCALE, representing a morbid or anomalous cornification of the epidermis (parakeratosis), exists in all true eczemas. It characterizes the moist as well as the dry forms of the disease, the papular and scaly and psoriasis-like as well as the moist or weeping forms. It is a histological characteristic of eczema, and Unna calls special attention to the observation that it is the result of an œdema of the transitional epithelium, and that, moreover, it is a parenchymatous and not an interstitial œdema. It is due, in other words, to an increased amount of fluid in the epithelial cells themselves. This is observed in the prickle layer, which is characterized by an increase in the volume of the epithelial cells, and especially of the nuclei, which latter become rounder and stain distinctly. Thus, by the parenchymatous swelling of the epithelium the prickle layer of the affected part is increased in breadth.

Owing to the larger amount of fluid in the epithelium, the GRANULAR LAYER is similarly affected, the separation of keratohyalin being for the most part arrested. The normal process of granulation which occurs in



ECZEMA.

CHRONIC, CONFLUENT VESICO-PUSTULAR, CRUSTED VARIETY.

The disease exists upon the face of a young child, and is a common form of infantile eczema, tending to pursue a slow course, and to be better and worse from time to time. The skin is inflamed and œdematous, weeps or discharges the characteristic fluid of eczema, and is covered with a thick yellowish-brown crust. Duration one year. (The AUTHOR'S case, from a water-color drawing.)



ECZEMA.

CHRONIC, ERYTHEMATO-VESICULAR AND PUSTULAR, WEEPING, CRUSTED VARIETY.

The disease, occurring in a scrofulous negress aged ten years, occupied the face, neck, and trunk, and had existed several years. (Dr. CHARLES N. DAVIS's case. Seen by the AUTHOR.)

this layer is variably interfered with. The amount of keratohyalin present varies greatly. The granular cells are much affected, and are no longer capable of division. There exist a stasis of these cells, a broadening of the granular layer, and a retardation of the process of cornification. The amount of moisture in the upper epithelial layers is exceedingly variable. Unna finds that the amount of keratohyalin varies from papilla to papilla, and that this sudden change is really characteristic of eczema, for in no other disease does it occur in so small a space and so frequently.

In the **HORN**Y LAYER there occur (1) broadening of the basal horny layer; (2) an abnormally small amount of fat; and (3) an abnormally good preservation of the nuclei. According to Unna, parakeratosis consists in an abnormally simple cornification,—that is, in the absence of the many intermediate stages which accompany normal cornification. The “cell walls become cornified as usual, but the cell contents remain moister and better preserved. A scale is, therefore, only a hardened, improperly cornified area of the prickle layer. Proper cornification is hindered by the abnormal saturation, the parenchymatous œdema, of the epithelial cells.”

Reference having been made to the process of parakeratosis, the subject of epithelial proliferation or growth (“acanthosis”) may be considered. Every eczema of long standing leads to more or less epithelial growth, as shown clinically by the accumulation of epithelium on the surface in the form of scales, and by the presence of **PAPULES** and **PATCHES OF INFILTRATION** and induration. The so-called papillary growth in eczema is not really a growth of the papillæ, but is due, as Auspitz originally pointed out, to the proliferation of the epithelium downward, between and upon the papillæ, thus elongating, flattening, or otherwise changing their form by pressure from above. It concerns the question of resistance of the papillæ and corium. The same is true of psoriasis. The process has been discussed in the chapters on anatomy and general pathology, in considering the epidermis and its performance.

The **SPONGY TRANSFORMATION** of the epithelium and “vesicle formation,” as described by Unna, may next be considered. This distinguishes all moist forms of eczema. It begins in a general dilatation of the lymph-spaces of the prickle layer, constituting (in contrast to simple parakeratosis) an interstitial œdema of the epidermis. It is characteristic that it increases from within outward. The character of the exudation in eczema is in the beginning serous, but later it becomes sero-fibrinous. The “vesicle of eczema” of Unna (by which, the author would have it understood, is not meant the vesicle of acute eczema of most authors, but the vesiculation or vesication which is characteristic of eczema madidans) is the final product of a slowly progressive pathological process, to which from its physical character the name “spongy transformation of the epithelium” is given. This view is opposed to that in which the vesicle of eczema is considered to develop like the

vesicles of zoster and of variola, both of which commence with a primary colliquation and degeneration of the epithelial cells. The actual basis of the vesicle of eczema is a net-like, connected system of dilated canals in the most superficial part of the prickle-cell layer. The surrounding epithelium during the formation of the vesicle of eczema remains for the most part absolutely normal.

CHANGES IN THE CONNECTIVE TISSUE, AND INFILTRATION.

There is deformation of the papillæ, which are usually long and thin, but may be flattened. They may, moreover, be œdematous, especially the ends, which may be club-shaped, but there are no signs of active proliferation in all these changes of form. An increased growth of connective-tissue cells is found around the subpapillary vascular network, but not inside the papillæ. In cases where the cellular infiltration is moderate, the infiltration along the vessels diminishes rapidly from the subpapillary vessels downward. The greater the infiltration the more thoroughly are the interspaces filled with young connective-tissue cells, so that the whole cutis, and especially the surroundings of the coil glands, are pretty regularly infiltrated. In some chronic forms the subcutaneous connective tissue and even the panniculus adiposus are distinctly affected in one way or another. According to Unna,¹ however marked the thickening, the cellular infiltration does not go beyond the border of the panniculus.

The cellular infiltration shows mainly negative signs, but the collagenous tissue is persistent. The firmness of the infiltrated parts in eczema is accounted for by this observation. The cellular infiltration, in marked cases, is gradually and regularly thinned off at the border next the healthy cutis, until it is finally limited to the papillary body. "Mastzellen" are not especially numerous; they may occur, however, in considerable numbers in chronic eczema of long standing. The small number of mitoses inside of the infiltration as compared with the number of the epithelial mitoses is worthy of remark.

The histological characters of the eczematous infiltrations, according to Unna, consist mostly of small, multiform, connective-tissue cells, poor in protoplasm, lying closely together, and having a marked but not very deeply stained nucleus. Where the cutis is infiltrated only slightly they appear mostly as small spindle-cells closely connected. Plasma-cells are present only in long persistent dense infiltrations scattered in small groups at the seat of the densest infiltration, especially around the larger vessels and the sweat glands.

ECZEMA RUBRUM.

This clinical variety, according to Unna, illustrates the spongy state ("status spongioides") of the disease. He designates it as a "non-

¹ Op. cit., p. 210.

infectious recurrent eczema." It consists of a chronic, spongy condition, with a loosening, of the epithelium. This takes place under the crusts. It is characterized by a moist, loosened, red surface, swollen from the absence of the pressure of the horny layer, which constantly oozes serum from the invisible pores of the dilated lymph-spaces of the well-preserved epithelium. This variety of eczema never heals without scaling,—i.e., without the young epithelium encapsuling the old spongy area and replacing it.

There are three forms of *eczema rubrum*: 1, pure serous; 2, purulent; 3, cornified ("larvirten" of Unna). In the first there is excessive loosening of the epithelium. The great quantity of serum prevents cornification. There is no formation of crusts, because they are washed away by the serum. It is the moist form of the disease, and is the result of specially vulnerable epithelium. The second (purulent) form is commoner, and is more influenced by local conditions, as exemplified in "sore leg" and "old eczemas of the leg." Here the spongy transformation affects wide areas of the upper layers of the epithelium, all its lymph-spaces being packed with leucocytes. Large vesicles are not formed, because there is no resistance of the horny layer, but under the surface there are small elementary vesicular dilatations which are also filled with leucocytes. In the third form of the spongy condition there are no crusts, but the area is covered with the horny layer. Remains of crusts, however, may be present. This form in particular represents the "non-infectious recurrent eczema" of Unna.

In *eczema keratodes* (the "status hyperkeratodes" of Unna), and in *eczema fissum* or *rimosum*, especially as it occurs on the palm of the hand and the sole of the foot, there exists a condition which is just the opposite of the spongy state. Here the prickle layer is soon covered by the horny layer, consisting of an excessive collection of cornified epithelium, parakeratosis being the main change. Vesication (the "vesicle formation" of Unna) is limited, as in the spongy state, chiefly to the uppermost strata of the prickle layer. The "intensity of the cornification leads to the heaping up of very thick, parakeratotic, hardened scales." Fissures are present, which extend down to the swollen prickle layer, and even into it, causing bleeding.

In the psoriasis-like forms ("status psoriasiformis" of Unna) of eczema the condition of the skin is much like that in true psoriasis, it being well supplied with blood, and there exists a tendency to parakeratosis. The patch is characterized by softness rather than hardness; profuse growth of epithelium, in the form of dry, crumbly, greasy scales, tending to heap up; a light color; absence of pigmentation; and comparatively little itching. The epithelial growth predominates over the hyperkeratosis, and, on account of the strong pressure on the papillary layer, there is everywhere marked development of the system of lines and furrows on the surface of the horny layer, while the suprapapillary

prickle layer remains comparatively thin. Histologically the condition resembles very closely that of psoriasis.

Under the caption of *eczema pruriginosum*, or the "status pruriginosus" of *eczema*, Unna describes an *eczematous* condition characterized by (1) excessive cornification; (2) pallor of the skin; (3) pigmentation; and (4) very severe itching. It affects especially the young, and in particular poorly nourished individuals. It corresponds to the *lichen urticatus* of English authors, and much resembles the *prurigo* of Hebra. The changes which take place in the skin are due to an increased vascular tone in the affected individuals, clinical observations as well as the histological condition pointing to this conclusion.

RÉSUMÉ.

If the histopathology of *eczema* be summed up, it will be found that the disease is characterized, in the first place, by the most important process of *parakeratosis*, which in some degree is always present. It is, therefore, pathognomonic of *eczema*. When it exists in its mildest expression and alone, it illustrates the first elementary form of *eczema*. It is exemplified by *pityriasic* forms with slight *furfuraceous* or *branny* scaling, as met with, for example, especially on the face and the scalp. Where *acanthosis* is added to *parakeratosis*, an elevation (a *papule* or a *patch*) forms having a dry scaly surface. If the *parakeratosis* proceeds to moist *eczema*, there exists the spongy transformation of the prickle layer, and if the exudation is greater, *vesication*, or *vesicle-formation*, takes place, resulting in the *crusted* form, with or without *vesicles*. According to Unna, *morococchi* are found abundantly in moist crusts, which constitute an excellent soil for their development. As the crust splits and opens, these cocci work their way down through fissures to the moist, *vesicating* surface of the skin itself.

Diagnosis.—*Eczema* being by far the commonest and the most important of all the cutaneous diseases, a careful study of the subject of diagnosis becomes necessary. When the varied primary and secondary lesions and the innumerable modifications which they may assume are taken into consideration, the importance of diagnosis is obvious. No other disease appears in such varying forms. At one time there is an *erythema*, with more or less scaling, followed, perhaps, by a weeping surface and crusts; in other cases, *vesicles*, perfectly or imperfectly formed, passing into *vesico-pustules* and *pustules*, occur; again, *vesico-papules* and *papules*, which when aggregated may break down into a *patch*, sometimes accompanied, it may be, by moisture, or, on the other hand, dry and scaly. Finally, one or all of these primary lesions may occur, together, or, as is generally the case, at different periods in the course of its existence, presenting a complete picture of this remarkably protean skin disease. When the numerous secondary changes which occur are added to the primary lesions, it will be readily perceived that

the differential diagnosis may become difficult, as in the case of scabies. To understand the disease thoroughly, it must be viewed as a whole, when it will be noted that it has certain clinical and histological characteristics, especially the latter, some of which are invariably present. That undue repetition may be avoided, the attention of the reader is directed to the chapter on the pathology of the disease, where the histological characteristics are set forth.

CLINICAL FEATURES.

From the clinical point of view, a certain degree of cell infiltration is readily recognizable in eczema. It may be marked or slight, according to the variety and stage of the disease and the duration and severity of the process. It may be detected by the thickening of the skin, which may be both seen with the eye and felt with the finger. Swelling and oedema exist in all acute eczemas, and often also in the chronic forms. The patch is always congested, and the redness disappears quickly or slowly beneath pressure, returning in like manner. The formation of fluid or of plastic material is a constant symptom in varying degrees. In the majority of cases, fluid exudation, moisture, weeping, or discharge, slight or excessive, according to the variety of the disease, has taken place at one stage or another of the process. This symptom is peculiar. It is characterized by an oozing of serous fluid, different from pure serum, in varying quantity, which discharges more or less uniformly from the surface, and collects there, forming thin or thick crusts. It is appropriately termed weeping, watering, leeting, discharging, or running. No other disease manifests this symptom, including the subsequent crusting. It may be of the nature of a clear fluid or puriform, and sometimes may be streaked with blood. But, owing to the process being superficial, bleeding is seldom a marked feature. The plastic exudation, on the other hand, constituting the papule or patch of eczema, is more difficult of recognition, and may be mistaken for other forms of disease, to be referred to. Following discharge come crusts, which may be thin or thick, depending upon the conditions, and those of eczema when typical cannot well be confounded with others. When the discharge has been copious, as is commonly the case, the crusts form rapidly and in quantity, and are yellowish, greenish, or brownish, usually variegated, and adhere to a moist surface beneath. The amount of cleansing, of course, modifies the crusting, but it is not infrequently so abundant as completely to mask the skin. Finally, it must not be forgotten that two or more varieties of the disease may exist at the same time, presenting multiform lesions in various stages of development.

Of the diagnostic subjective symptoms itching is the most characteristic. It is usually of a decided character, exceeding that of most diseases in which itching is a prominent symptom. Although variable, it is a constant symptom in simple, true eczema, very rarely being

altogether absent. With the itching there is in most cases an irresistible inclination to scratch. Burning sensations are also often complained of, as well as a mixture of itching and burning.

The diseases with which eczema is most liable to be confounded may now be considered. The diagnosis of the several local varieties, as, for example, eczema capitis, eczema faciei, eczema palmare, eczema mammæ, and the like, is considered specially elsewhere, in connection with the local varieties of eczema.

ERYSIPELAS.—This disease may at times resemble eczema erythematosum, and also acute vesicular eczema, particularly when the disease is about the face. The points of difference, however, are numerous, and are usually patent. Erysipelas is an acute affection, commencing at a point and usually extending itself on the periphery in a creeping marginate manner. The inflammation is seated deeper than in eczema, involving the subcutaneous tissues as well as the skin, and is attended with heat, and usually much swelling and œdema. These latter symptoms also occur sometimes in acute eczema, but are not peculiar or specific, as is the case in erysipelas. The sensations are those of burning and of fulness. The skin is dark red, shining, and tense; there is no discharge, except from the bursting of blebs, which are often present, especially in the later stage of the affection. The character of the fluid discharged is different from that of eczema, being more distinctly serous. The disease, moreover, is accompanied by symptoms of general disturbance and fever.

Erysipeloid may also be confounded with erythematous eczema, but, as in the case of common erysipelas, the infectious nature of that disease and its clinical characteristics will be found wanting in eczema. The course of the disease is different.

ERYTHEMA.—Eczema can scarcely be mistaken for any of the simple erythemata, or hyperæmias, for in these disorders there is no marked inflammation, hyperæmia without exudation being the prevailing process. The characteristic features of eczema are all wanting. The exudative erythemata, of which there are many forms, are much more likely to be confounded with eczema, especially with the erythematous variety.

It is to be remembered that some of the semi-malignant and malignant diseases in their earliest stages, and even later, manifest erythematous and eczematous symptoms. Thus, granuloma fungoides may exhibit such manifestations premonitory to the characteristic lesions, in which case the true nature of the disease may at first not be suspected. Sometimes the large flat patches which often form in this disease become excoriated, ooze an eczematoid serous or puriform fluid, and crust, thus complicating the diagnosis.

ERYTHEMA SCARLATINOIDES.—The symptoms are similar to those of dermatitis exfoliativa, and are different in many particulars from those of erythematous eczema.

URTICARIA.—The peculiar variety of this disease known as urticaria

papulosa may present lesions looking much like *eczema papulosum*, especially in young children, which fact has given rise to the term *LICHEN URTICATUS*. The papules, however, are to be viewed as a variety of urticaria or as a distinct disease, rather than as an *eczema*. The diagnosis is sometimes difficult, but in most cases the urticarial element is tolerably conspicuous.

PRURIGO.—This disease as described by Hebra and Kaposi is only occasionally met with in the United States. From Zeissler's observations it would seem to be commoner in Chicago than in any other large American city. In Philadelphia it is, I may say, almost unknown. It resembles some forms of chronic papular *eczema*, but the lesions are less inflammatory and are more persistent than in *eczema*. It is more closely allied in etiology and pathology to chronic papular urticaria, or to *lichen urticatus*, than to *eczema*.

HERPES.—In their early stages herpes zoster and *eczema* may bear some resemblance, although the irregular distribution of the papules and vesicles in *eczema* will serve to distinguish it from the peculiar grouping in herpes zoster. *Eczema* is never attended with the acute neuralgic pain which in almost all cases precedes and accompanies zoster, a feature in itself usually sufficient to prevent confusion in diagnosis. *Eczema vesiculosum* is more apt to resemble other varieties of herpes, especially those occurring about the face and the genitalia. The latter, however, run their acute course in a few days or a week as simple affections.

IMPETIGO CONTAGIOSA.—This disease occurring upon the face and hands, its usual seats, may be mistaken for vesico-pustular or pustular *eczema*. The fact that it is liable to appear upon regions other than those mentioned must be kept in mind. The lesions when typical are vesico-bullous, bullous, vesico-pustular, and pustular, the former variety being the commonest, especially in the beginning. The process, including the crusting, is much more superficial than *eczema*, pursues an acute course, and is readily amenable to simple local treatment. When it occurs upon the scalp and is complicated with pediculi, there results a dermatitis *eczematosa* or an *eczema*, the diagnosis resting with the prevailing process that may exist.

IMPETIGO.—The term *impetigo* is employed to express a disease characterized by discrete or confluent pinhead to pea or finger-nail sized, flat or elevated pustules, which may either rupture, or dry up and crust without rupture, the latter being the rule. The pustules of *impetigo* differ not only from those of pustular *eczema*, but also in certain particulars from those of *impetigo contagiosa* and of *ecthyma*. From a clinical standpoint they are readily distinguished. In pustular *eczema* the lesions are superficial, spread readily, and incline soon to rupture and become crusted. In *impetigo* they tend to persist without rupturing, owing to the fact that their walls are usually thick, the horny layer not being

defective, as is the case in eczema. The pustules are more like those of varicella and of variola than eczema. Areolæ may exist or be absent in impetigo, depending upon the size, form, and depth of the lesions; in eczema, owing to the process being more superficial, they seldom occur.

ECTHYMA.—In this disease the pustules are discrete or confluent, usually the former, flat, and spread out. They soon become crusted with a yellowish or brownish crust, and possess marked bright red areolæ. The lesions, as a rule, are pustular from the beginning and throughout their existence, and do not tend to rupture. They occur chiefly in the lower extremities, and in debilitated, impoverished, usually middle-aged subjects. They possess none of the characteristics of eczema, and consequently cannot well be confounded with the pustules of that disease.

PEMPHIGUS.—Eczema cannot be confounded with typical pemphigus vulgaris, for here the blebs are bullous from the beginning, are usually discrete, without areolæ, and have a different history from the lesions of eczema. The very rare variety of pemphigus known as pemphigus foliaceus may resemble eczema, but it differs not only in the symptoms but in the history and in its course. Eczema, it may be said, very seldom manifests itself in the form of even a flat bleb.

MILIARIA.—The papular variety of miliaria, known popularly as **PRICKLY HEAT**, may be confounded with eczema, especially in the early stage, but the sudden advent, the marked involvement of the sweat glands, and the conditions under which it manifests itself will be sufficient to distinguish it from acute papular and vesico-papular eczema. The subjective symptoms are different, pricking and tingling sensations, rather than itching, characterizing miliaria.

SEBORRHŒA.—Squamous eczema may bear many points of resemblance to this disease. The two diseases often present similar lesions, especially as they occur upon the scalp. In this region they may even at times coexist or complicate each other, giving rise to seborrhœic eczema. In eczema the scales are usually larger, less abundant, less greasy, and drier than in simple seborrhœa. In eczema, moreover, they are generally seated upon a circumscribed patch, while in seborrhœa, as a rule, they cover the scalp more or less uniformly. The skin in eczema is red, inflamed, usually thickened, and itchy; in congestive or exudative seborrhœa it may be reddish or red, but, as a rule, it is not so red as in eczema. In the anæmic form of seborrhœa capitis, on the other hand, the scalp is of a grayer or bluer color than normal. Seborrhœa may or may not be itchy. Sometimes, where there is much hyperæmia or inflammation, the diagnosis may be difficult. The histories of the two affections are often sufficiently different to render the diagnosis clear. They are both common diseases.

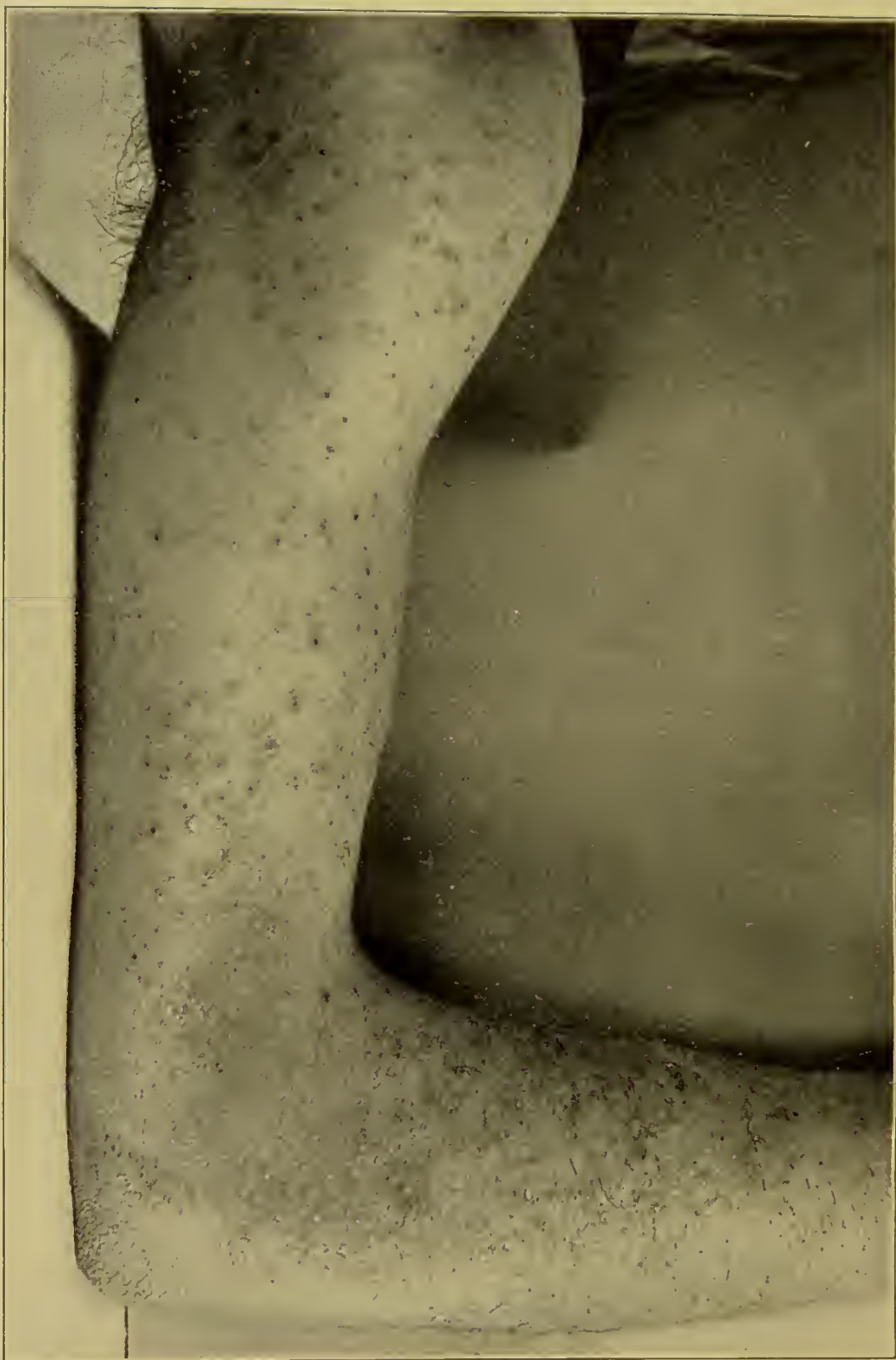
LUPUS ERYTHEMATOSUS.—This disease is a notable imitator of various diseases, and at times, especially in the beginning, may resemble erythematous eczema. Sometimes lupus erythematosus manifests itself



ECZEMA.

PUSTULAR, IMPETIGINOUS VARIETY.

The disease was confined to the face and eyelids, and occurred in a girl nine years of age. The lesions on the nose and cheeks resembled impetigo, but their course indicated that they were rather eczematous in nature. The eyelids were much inflamed and scaly, and the seats of chronic eczema. The patient was under observation in the University Hospital for several weeks. (The Author's case.)



ECZEMA.

ACUTE, PAPULO-VESICULAR VARIETY.

The disease, occurring in a man twenty-five years of age, occupies symmetrically the upper portion of the trunk and, especially, the arms and forearms, both extensor and flexor surfaces being invaded. The lesions are minute and small, pinhead-sized, disseminate, discrete, acuminate, reddish papules and papulo-vesicles, which as yet are not much excoriated. Duration six days. (The Author's case.)

in disseminated, acute or chronic, small or large spots or patches, which, in the early stages especially, may readily be mistaken for erythematous eczema, particularly on the face. More or less itching and slight desquamation or scaling may be present, which may add to the existing doubt. The pathological anatomy of the diseases, however, is different, and this may be recognized by the naked eye, and especially by the touch, the infiltration in the derma in lupus erythematosus being marked and dense, so that the erythema is slow to disappear under pressure of the finger. The peculiar whitish, minute punctate appearance of the patch in chronic lupus erythematosus is characteristic. The appearance is somewhat as though a very small quantity of flour or some other whitish powder had been delicately and sparingly rubbed into the skin. This condition precedes the scaling.

PSORIASIS.—This also is a common disease, and is often confounded with eczema, the patches frequently being much alike. Both diseases may attack any part of the body, but are prone to occur on the scalp, in which region the most embarrassment in diagnosis is likely to arise. Typical eczema can hardly be mistaken for psoriasis, but chronic, infiltrated, inflammatory, scaly patches of eczema not infrequently look very much like that disease. The edges of patches of eczema usually fade away into the healthy tissue, whereas in psoriasis, as a rule, they terminate abruptly. The scales upon eczematous patches are generally thin and scanty; in psoriasis they are abundant, larger, and in most cases whitish or glistening, and imbricated. In eczema there will usually be an account of moisture at one stage or another of the disease; in psoriasis the process is always dry. The occurrence of the disease on other parts of the body will further serve to clear away any doubt; while the general history will assist materially in arriving at a correct diagnosis.

LICHEN PLANUS.—Papular eczema may be confounded with lichen planus, but, if the distinctive features of eczema be remembered, the differential diagnosis ought to be made without difficulty. The papules of lichen planus are generally flat, and usually have an irregular or an angular base; those of eczema are convex or acuminate, and usually have a circular base. Those of eczema, as a rule, are bright red in color; those of lichen planus have a dull crimson or violaceous hue, with smooth and shining or more or less scaly summits. Signs of abnormal cornification and hyperkeratosis, in the form of puncta,—being follicular collections of dried epithelium,—are usually present, especially in the chronic forms of the disease. The papules of eczema form quickly, and are apt to undergo change; those of lichen planus form slowly, and seldom exhibit any other form, remaining papules throughout their course. Lichen planus disappears slowly, and leaves marked violaceous or brownish stains in the place of the papules, whereas papular eczema leaves little or no pigmentation. In eczema the general health is seldom affected;

in lichen planus the nervous system is usually more or less deranged, malaise, depression, and debility being not infrequently notable symptoms.

The *LICHEN RUBER* of Hebra, a very rare disease, may be confounded with squamous eczema, but this is not likely to occur when its characteristics are considered. In like manner, *PITYRIASIS RUBRA PILARIS* may be mistaken for a squamous follicular eczema, but it resembles psoriasis much more closely.

PITYRIASIS RUBRA.—This rare disease presents symptoms which might be interpreted as eczema. It is to be distinguished by its uniform redness; by the presence of masses of large, thin, papery, whitish scales, which continually reproduce themselves; by the slight itching or burning heat; and by the absence usually of marked infiltration and thickening, the latter being a symptom common in chronic eczema. It undergoes but slight changes throughout its course.¹

DERMATITIS EXFOLIATIVA.—This disease, like the pityriasis rubra of Hebra, may be confused with erythemato-squamous eczema, although the exfoliative desquamation is more rapid and abundant than occurs in eczema. The disease is usually generalized, and the process conducts itself in most cases after the manner of an acute exanthem, with systemic disturbance and febrile symptoms.

DERMATITIS HERPETIFORMIS.—The herpetiform peculiarities in this disease are generally striking, and do not exist in eczema. The small vesicular and pustular lesions, occurring in little groups, and the remarkable evolution of the lesions, the occurrence of large vesicles and pustules and of blebs, and the tendency to relapses and recurrences, are all different from what we find in eczema. Dermatitis herpetiformis is a neurotic disease manifesting an herpetic type. It belongs to the herpetic rather than to the eczematous dermatoses.

TINEA TRICHOPHYTINA CIRCINATA.—This disease may be confused with eczema, especially with the squamous variety, but the courses of the two diseases are unlike, and in ordinary cases this feature alone should be sufficient to distinguish them. Eczema rarely shows a tendency to assume circular patches or to produce a marginate form; in tinea circinata, on the other hand, these peculiarities are characteristic.² In eczema there is no history of contagion, whereas in tinea circinata the disease may not infrequently be traced to this source. The edges of patches of eczema seldom terminate so abruptly as those of ringworm. Eczema tends to run a chronic course; tinea circinata, as a rule, an acute one. At times, however, tinea circinata pursues a slow and insidious course,

¹ For the diagnosis between eczema and the several varieties of Dermatitis the reader is referred to those diseases.

² So-called "eczema marginatum" is regarded by the author as a complicated form of tinea circinata or as an eczema complicated with tinea circinata, for a description of which the reader is referred to tinea circinata.



ECZEMA.

CHRONIC, SQUAMOUS, VERRUCOUS, FISSURED VARIETY, OF THE SOLE OF THE FOOT.

The subject is an elderly man, both soles being similarly affected. Disease confined to this region: it has existed many years, and is considerably better in summer than in winter. (Dr. HENRY G. PIFFARD's case.)



ECZEMA.

VARIETY RUBRUM, WITH FISSURES.

The disease exists in the form of a chronic, large, infiltrated patch on the back of the hand, with smaller localized areas of eczema elsewhere on the fingers and the forearm. There is much deep fissuring and considerable thickening of the skin. Duration six months. (Dr. HENRY G. PIFFARD'S case.)

and in these cases may be difficult to diagnose from eczema. The itching in eczema is usually severer than in *tinea circinata*, except where the latter disease attacks the genito-crural region. Finally, the microscope will reveal the existence of the trichophyton fungus, the cause of the disease, in the scales of *tinea circinata*.¹

There are, however, other forms of disease due to the trichophyton fungus, which may be designated in general as "anomalous forms of trichophytic disease," for the most part rare, which may resemble papular or squamous eczema, or even eczema rubrum. As is well known, occasionally papules are formed by the trichophyton fungus, which may resemble small patches of papular eczema. The disease described by Crocker as *DERMATITIS REPENS*, which bears resemblance to eczema rubrum, is suggestive also of parasitism. The marginate or serpiginous course of a disease should in all cases give rise to a suspicion that the process might be parasitic. In most cases microscopic examination, not merely of the effete products of disease, as scales and crusts, but of the tissue itself of the skin, should, if possible, be made.

SYCOSIS.—Both varieties of this affection, the trichophytic and the common variety (*sycosis vulgaris*), especially the latter, may bear considerable likeness to eczema of the beard.² When the eczema is localized in the follicles the diagnosis is more difficult, and can be reached only by considering all the features in the case, both clinical and histological.

TINEA FAVOSA.—The crusts of eczema rarely simulate those of favus in the beginning, but after *tinea favosa* has existed for a long time mistakes in diagnosis may occur unless the characteristics of the parasitic crusts be borne in mind. In doubtful cases the microscope should always be employed. The scalp is a common seat of both diseases, and it is here that a mistake is most likely to be made.³

SCABIES.—This affection in its early stage possesses more features in common with eczema than with any other disease. The contagiousness of the disease will be one of the strongest arguments against the likelihood of the case being eczema. A history of direct contagion may often be found in scabies, but this cannot be relied upon. Inflammation, papules, vesicles, pustules, and crusts all occur as in eczema, and these lesions alone, therefore, are of little assistance in arriving at the diagnosis. The presence of the sarcoptes, as proved by the burrow or by the extraction of the mite itself with a needle, of course will settle the question. But this demonstration is not always practicable, for in old cases the burrows have been destroyed and the intruder is no longer to be caught, as may often be done in the second or third week. The regions

¹ The points of differential diagnosis between *tinea tonsurans* and eczema of the scalp are given in describing eczema of the head.

² The differential diagnosis occurs in the consideration of eczema of the beard.

³ The differential diagnosis of these diseases is given in connection with eczema capitis.

of the body attacked offer valuable hints for diagnosis. Eczema is rarely so diffused as scabies; nor does it show itself in preference so markedly about the hands and fingers, axillæ, abdomen, mammæ, nipples, penis, and buttocks, all favorite localities for the exhibition of scabies. Where this disease has existed for some time, the whole body will be seen to be generally involved, the face and especially the scalp, however, remaining free, except in infants. Patches are not formed in scabies, unless the process has been permitted to run on for a long time, when they may be produced by scratching and secondary infection. In such cases impetiginous and ecthymatous lesions often result. Excoriations and applications of one kind or another both contribute to mask the original lesions of scabies and to render the condition of the skin similar to that of eczema. In some cases scabies becomes complicated with eczema, but in my experience in the United States this seldom occurs. In cases of doubt, and such cases are not rare, the diagnosis may generally be decided by judicious treatment. If the disease be scabies, parasitocides properly employed will soon afford relief, with subsidence of the more active symptoms; eczema, on the other hand, will, as a rule, not be improved by such treatment, and may be even aggravated.

ARTIFICIAL INFLAMMATIONS.—Various kinds and grades of cutaneous disease, especially upon the hands, may be produced by poisons, acids, alkalies, and other substances which cause inflammation of the skin, presenting an appearance much like acute eczema. The diagnosis between some dermatitides, such as the eruption from poisonous plants, croton oil, and the like, is sometimes difficult. Occasionally the existing condition is a complication, beginning as a simple dermatitis and passing into eczema. The regions affected, the distribution of the eruption, the uniformity and peculiar character of the lesions, and the artificial look which generally accompanies these diseases, will usually afford an insight into their real nature. If their nature be suspected, the history, course, and termination, moreover, will serve to distinguish them from true eczema.

LEG ULCERS.—It is well known that eczema frequently occurs in connection with simple and even other leg ulcers, especially in elderly persons. Often the process is complicated, but the characteristics of eczema when that disease is present are usually tolerably well defined, so that it is not difficult to decide to what extent eczema exists. In such cases it is best to treat the eczema first and subsequently to direct special attention to the ulcer, although often both forms of disease will yield to the same remedies.

CARCINOMA.—The only form of cancerous disease that is likely to be confounded with eczema rubrum is that known as Paget's disease, especially of the nipple. Occurring in this region in women the disease begins as an eczema, and sooner or later passes into cancer, in time usually invading the mammary gland. The peculiar firmness or hard-

ness of the patch, its circumscription, the chronic course, and the obstinacy of the disease to the remedies which usually cure eczema, will point to its true nature.

SYPHILIS.—Upon the body eczema can scarcely be confounded with syphilis. A certain form of syphilis, however, occasionally met with, occurring upon the scalp, may look much like ordinary eczema pustulosum with fissures; but it will be found upon close examination to be syphilis of a superficial ulcerating form, covered by eczematous-looking crusts. Such cases may prove puzzling until their true nature is recognized. The disease will generally have a peculiarly offensive and penetrating odor, which symptom alone may serve to distinguish it from eczema. It is important in all suspicious cases to remove crusts and other secondary matter before pronouncing diagnosis. The other varieties of eczema, the papular and the vesicular, can hardly be mistaken for syphilis. Itching, as a rule, is absent in syphilis; but there are some exceptions to this statement, notably with the acute and the subacute miliary papular manifestation.

Treatment.—The remarks to be made concerning the treatment of eczema apply to the disease in general, but with special force to chronic and rebellious forms, which, as every practitioner is aware, constitute the great majority of cases. Were eczema usually an acute or a self-limited disease there would be no occasion to devote much space to the discussion of constitutional treatment. But such is not the case, for in many instances in spite of every known means of local therapeutics the disease proves extremely obstinate. It is therefore, in my opinion, necessary to take a broad view of the subject. In doing so we shall find ourselves treating the disease rationally rather than empirically. The results, I do not hesitate to say, will be far more satisfactory if this plan be adopted. Before prescribing it is well to observe to which of the following clinical classes the case most properly belongs,—viz., plethoric, anæmic, chlorotic, strumous, debilitated, neurotic. The chief indications may thus be noted and a general plan of treatment laid down. It is also important to ascertain whether the patient is an infant, a child, a man or a woman, a working person, middle-aged or elderly. All these conditions materially influence us in the selection of the method of treatment.

It may be stated that there are no specifics for eczema, and that each case in which internal remedies are called for must be treated on general principles. Unless there exist positive indications for internal medication, all such treatment had best be withheld. Among drugs, the unnecessary and indiscriminate use of arsenic especially is to be deprecated. It is much too powerful to prescribe unless the indications for its employment are tolerably clear. When employed in unsuitable cases, it disturbs not only the alimentary tract but also and especially the nervous system, and aggravates the cutaneous disease. The treatment of

the disease covers a large field. In the consideration of this subject the outlines, indications, and some suggestions only can be given, for to enter upon the matter fully would carry the chapter beyond the space assigned to it. It may be stated that eczema in almost all instances is a curable disease. Cases, however, are occasionally met with in which the eczematous process has so firm a hold upon the skin, and the intimate factors are so powerful, that a cure is doubtful or, it may be, impossible. Cases of this kind are certainly so rebellious as to warrant such an expression of opinion.

LOCAL VERSUS INTERNAL THERAPY.

Two distinct methods of therapeutics are employed, one directing its force against the skin itself as the offending organ, relying upon this means alone to restore health to the part; the other endeavoring to cure the disorder by the employment of internal or constitutional remedies intended to act against the cause of the disease. The plan which is doubtless the correct one for the majority of cases, and which in my experience has proved most satisfactory, is that which for the average chronic case recognizes the value of both local and constitutional remedies. I believe that this doctrine gives the best results in practice. In many cases local treatment is not only the more valuable, but may be mainly or even entirely relied upon. Thus, in small, localized areas, which do not tend to spread, whether acute or chronic, local therapeutics may prove all-sufficient to cure. In other cases the skin is in so debilitated a state, this condition arising from varied causes, that restoration to health is not possible by local means alone. In these instances, even if the local manifestation be relieved, relapses and recurrences are apt to take place. In severe, wide-spread, and obstinate forms of the disease the nutrition of the skin must first be improved by other methods, as through hygiene, attention to the digestive or nervous system, and the like. The influence of the nervous system especially upon the nutrition of the skin is strong, and is as often obviously noticeable in eczema as in certain other cutaneous diseases. Local therapeutics, however, should never be neglected. Each case demands special advice in order that the best results may be obtained.

CONSTITUTIONAL TREATMENT.—Constitutional remedies, if judiciously prescribed, will prove of benefit in many cases. They are, however, by no means invariably demanded, and should not be prescribed in a routine way. Whatever remedies are ordered should seem indicated to overcome some general disturbance or defect in the economy. Judgment and discrimination in this matter must be exercised.

DIET.

The subject of diet should in the first place receive attention. During an acute attack it is important that this be appropriate for the case, which means that the general condition of the patient must be taken

into account. This remark applies with equal force to many cases of chronic eczema. Where the natural habit is plethoric, the food should be plain, and in the case of large eaters the amount should be limited. If there be any disturbance of the digestive tract, evidenced by flatulence, furred, moist, dry, or glazed tongue, and the like, the various articles of food which are difficult of digestion—as, for example, pastry and cakes of all kinds, gravies and sauces, pork, cabbage, pickles, cheese, beer, and wine—should be interdicted. The gouty or lithæmic subject with eczema should especially avoid all forms of pastry, puddings, sweets, sauces, condiments, and liquors, confining the diet largely to roast and broiled lean meats, fish, eggs, and green vegetables, together with the free use of diuretic waters (like the Poland Spring) or of hot water a half-hour before meals. I would call attention particularly to the importance of using such waters in copious draughts, and in all cases upon an empty stomach a half-hour before meals. This diet applies with equal force to many others who may have no gout or lithæmia, but who require plain food. A change of diet from heavy to light food is often beneficial, especially with persons who enjoy the luxuries of the table. The state of the bowels is of importance, free movement being desirable in all cases where there is any tendency to constipation.

The importance of nutritious food, especially milk and eggs, in certain cases may be referred to. In overworked and mentally overstrained neurotic subjects there often exists a need for as much good food as the patient can digest and assimilate. Such subjects are sometimes in a semi-starved state, and will be much benefited by attention to extra food in the way especially of eggs, milk, and cream. The quantity should be prescribed, care being taken that not more is used than can be assimilated.

Derangement of the digestive function, especially when chronic, is a common cause of the disease, and should be remedied. Dyspepsia should always receive attention, and every means be employed to remedy the condition. Defective functional activity, wherever found, should be treated on general principles. Malassimilation, impaired nutrition, and debility are all to be looked upon in the light of possible causes. The nervous system, so often at fault in some forms of eczema (as in many eczemas of the hands and feet), should receive due attention. The condition of the kidneys and the biliary secretion should be investigated, especially in chronic cases.

DRUGS.

Having thus indicated some of the more prominent points in the general treatment, the various drugs which are found to be of service may be spoken of. Aperients are of value in many cases, particularly in the highly inflammatory varieties of the disease, often dependent upon functional derangement of the alimentary canal. Salines especially are to

be recommended, and among these magnesium sulphate occupies the most conspicuous place. It may in many cases be combined to advantage with small doses of iron, as in the following well-known prescription :

R Magnesii Sulphatis, \mathfrak{z} iss ;
 Ferri Sulphatis, gr. viii ;
 Aq. Menth. Piperit. ad $\mathfrak{f}\mathfrak{z}$ iv.

M.—Sig. One tablespoonful,
 with a gobletful of water, half an hour before breakfast.

This may also be prescribed to be taken in teaspoonful doses, well diluted, three times daily, before or after meals. The same formula containing in addition dilute or aromatic sulphuric acid, ten minims to the dose, is likewise valuable. It is known as “*mistura ferri acida*,” and is very useful for many cases, especially in dispensary and hospital service. Both of these formulæ are highly esteemed by the author, not only in selected cases of eczema, but also in other diseases, as acne, comedo, and seborrhœa. The following is also an acceptable ferruginous laxative mixture :

R Magnesii Sulphatis, \mathfrak{z} i ;
 Sodii Chloridi, \mathfrak{z} i ;
 Ferri Sulphatis, gr. iv ;
 Tinet. Cardamomi Comp., $\mathfrak{f}\mathfrak{z}$ i ;
 Aq. Dest. ad $\mathfrak{f}\mathfrak{z}$ iv.

M.—Sig. One tablespoonful
 in a gobletful of water before breakfast.

Rochelle and Glauber's salts, cream of tartar, and the various other aperient salts are useful. Salines, it must be kept in mind, however, are not tolerated by all subjects.

An acid tonic aperient with sodium phosphate, especially serviceable where the bowels are easily moved, may be referred to :

R Sodii Phosphatis, \mathfrak{z} i ;
 Acidi Phosphorici Dil., $\mathfrak{f}\mathfrak{z}$ v ;
 Syr. Zingiberis, $\mathfrak{f}\mathfrak{z}$ iss ;
 Aq. Menth. Piperit. ad $\mathfrak{f}\mathfrak{z}$ vi.

M.—Sig. One tablespoonful,
 in a large wineglassful of water, thrice daily.

NATURAL MINERAL WATERS.

Reference has been made to the use of the artificial saline laxatives in the treatment of general states of the system requiring such remedies. As already stated, magnesium sulphate is much the best of the purgative salts. The most satisfactory results are to be obtained from small rather than large doses. The laxative mineral spring waters, as, for example, the Hathorn and Geyser springs of Saratoga, Ofner Racoczy, Hunyadi János, Friedrichshall, Püllna, Eseulap, Rubinat, Villacabras, and Carlsbad waters, as well as some of the stronger sulphur waters, are beneficial in some cases. These should always be taken on an empty stomach, and especially before breakfast. It must be remembered, how-

ever, that there are persons who do not tolerate mineral waters, especially purgative waters, in any form. A sojourn at the springs is often followed by better results than the plan of using the waters at home. Benefit is often to be derived from the employment of mineral waters taken at the springs in the form of baths or drinking-water combined. Taken internally, many spring waters, such as Bedford, Rockbridge Alum, Bath Alum, Saratoga, and Oak Orchard Acid, in this country, and Spa, Schwalbach, and Franzenbad in Europe, act as general tonics, and are of service for debilitated neurotic eczematous subjects. In other cases alkaline waters are to be preferred, as the Saratoga and Berkshire Soda springs, and Vichy, Vals, Royat, and Ems in Europe. The alkaline sulphur springs, as Richfield, Sharon, Avon, and the many sulphur springs in Virginia and other States, also have their uses in certain cases. In Europe the sulphur springs of Harrogate, Moffat, Strathpeffer, Aix-la-Chapelle, Barèges, Luchon, and Enghien are all famous. The arsenical waters of La Bourboule and Levico may also be mentioned as holding arsenical salts in solution in appreciable quantity, and as having considerable reputation in suitable cases of chronic eczema. It is difficult to estimate the value of springs in general in the treatment of eczema, or indeed of any cutaneous disease. It may be stated, however, that in certain selected cases they sometimes prove beneficial and even curative. They are to be recommended not as specifics, but with the view of overcoming deranged states of the system which may be acting injuriously upon the skin. In this way I believe they may be of much service in selected subjects. In some cases the influence of the natural mineral waters upon the skin itself in the form of baths is beneficial, but I believe other modes of local treatment to be preferable. Additional information concerning saline purgatives and other mineral waters is given in the chapter on General Treatment in the first part of this work.

CALOMEL AND OTHER PURGATIVES.

Where there are a coated tongue, light-colored evacuations, and irregular action of the bowels or constipation, and also in other conditions, calomel, especially in fractional-grain doses, repeated every few hours, may often be administered with good result. Its employment by this method should not be abandoned too soon. I am in the habit of prescribing tablets containing one-twelfth to one-sixth of a grain of calomel and two to four grains of sodium bicarbonate four times a day, keeping up their use in some cases for several weeks or longer. The dose is to be regulated by the action. The drug may often be discontinued and recommenced with benefit. In selected cases it unquestionably often acts happily upon the skin. In other cases a blue pill or pills of aloes and iron (half a grain of each of the latter twice or thrice daily) are indicated. In the beginning of an acute attack remedies useful in disordered stomach, bowels, and secretions are often indicated. Derange-

ments of this character should in all instances be rectified first, after which other remedies, if demanded, may be prescribed.

A serviceable bismuth, magnesium carbonate, and rhubarb mixture consists of the following ingredients :

℞ Bismuth. Carb.,
Magnes. Carb., āā ʒiiss;
Tinet. Rhei, fʒiiss;
Syr. Zingib., fʒi;
Spts. Chloroformi, fʒii;
Aq. Menth. Pip. ad fʒviii.
M.—Sig. Dose, one tablespoonful,
with water, thrice daily.

In infantile eczema, especially when the bowels are irregular and the digestion is imperfect, good will also be obtained from the employment of rhubarb, alone or with magnesia or soda, in repeated doses. Castor oil, at night or in smaller doses repeated two or three times daily, continued for a week or longer, is sometimes useful in infants and children ; also a mixture of equal parts of castor oil and syrup of rhubarb.

ALKALIES, COD-LIVER OIL, POTASSIUM IODIDE.

Eczema occurring in young or elderly persons, especially in those with a gouty or rheumatic disposition or in those who are *bons-vivants*, may often be successfully treated with diuretics and alkalies, as potassium acetate and carbonate, lithia, sodium bicarbonate, and liquor potassæ in ten or fifteen minim doses, thrice or oftener daily. In selected cases they are undoubtedly of great value. Such drugs should in all cases be used freely diluted, for they act better in this way, and not to excess as to either dose or length of period of administration. The alkaline spring waters are useful, but, as used in the patient's home, less so than the alkalies referred to. In some cases salicylic acid or colchicum may be added to alkalies with advantage. Where a stimulant is required, ammonium carbonate with arsenic will be found serviceable, as in the following :

℞ Ammonii Carb., ʒii;
Liq. Potass. Arsenitis, fʒss;
Syr. Zingiberis, fʒii;
Aq. Gaultheriæ, fʒvi.
M.—Sig. One tablespoonful,
with a large wineglassful of water, thrice daily.

In the treatment of gouty or lithæmic eczema, particularly in the elderly, accompanied by latent or manifest symptoms of this state of the economy, due attention must be devoted to the diet and drink, particularly in the avoidance of nitrogenous food and alcohol, especially malt liquors. The free use of a simple or an alkaline mineral water on an empty stomach is indicated here ; also suitable muscular exercise, and the daily use of the sponge bath, with friction, and, where practicable, a residence in a warm climate. In these cases the salts of lithium

are useful, as, for example, five grains of lithium carbonate and fifteen grains of potassium carbonate. Paget's well-known, wise alliterative may be quoted with benefit to all those who need such advice,—viz., “to avoid what is strong, salt, sour, or sweet.”

If the patient possess a naturally weak constitution (as is so often the case with persons of light complexion and a tendency to glandular disease), manifesting signs of imperfect nutrition or, it may be, the so-called scrofulous or strumous state, cod-liver oil may be useful. In my experience it is of most value in children. In this class of subjects, particularly children, calx sulphurata and the salts of lime may in selected cases prove useful. Piffard, especially, recommends calx sulphurata, to be used in fractional-grain doses, in acute and subacute cases in children in one-twenty-fifth of a grain, in adults in chronic cases in one-quarter grain doses. Sometimes potassium iodide in small doses with an alkali may be prescribed with advantage, although the iodine preparations for the majority of cases are not beneficial, and hence should be ordered only to meet special indications.

ACIDS, QUININE, STRYCHNINE, IRON, ANTIMONY.

Sometimes in debilitated and other patients the mineral acids, as dilute hydrochloric acid, in doses of from ten to twenty minims, prove useful. Aromatic sulphuric acid combined with quinine, as in the following, may in such cases be advantageously given :

R Quininæ Sulph., $\mathfrak{z}\text{i}$;
 Acid. Sulph. Aromat., $\mathfrak{f}\mathfrak{z}\text{iii}$;
 Syr. Limonis, $\mathfrak{f}\mathfrak{z}\text{iss}$;
 Aq. Gaultheriæ ad $\mathfrak{f}\mathfrak{z}\text{vi}$.
 M.—Sig. One tablespoonful,
 with water, before meals.

Quinine, nux vomica, and strychnine are of undoubted value in suitable cases. According to Fagge, Pye-Smith, and Eustace Smith, quinine has a distinct effect, particularly in the case of infants, children, and young persons, in preventing itching. For a child one year old half a grain of quinine sulphate may be given before bedtime, or from three to five grains to a boy ten or twelve years old. In anæmic, pale, and spare subjects, especially children, the preparations of iron are often valuable, and of these the tincture of the chloride, with glycerin and syrup, the syrup of the phosphate, the syrup of the iodide, the sulphate, and the citrate of iron and quinine may be referred to, but many others are also useful. In the same class of subjects, sulphur and calx sulphurata may be used, and sometimes are more serviceable than iron, especially when continued for some time.

Antimony in small doses, one sixty-fourth or one thirty-second of a grain of tartarated antimony, sometimes acts favorably as a nerve tonic and alterative, especially in debilitated neurotic subjects. In acute

eczema in plethoric subjects it may be administered in larger doses to reduce vascular pressure.

ARSENIC, TAR, SULPHUR, ICHTHYOL, PILOCARPINE.

Arsenic is unquestionably of benefit in some cases, but, as has been remarked elsewhere, it is important to select the case as well as the time for its administration. If given to examples of eczema indiscriminately, it will surely prove of more injury than benefit. Not infrequently in practice it will be noted that the disease is aggravated by the drug. In no other cutaneous disease is discretion more called for in the employment of this remedy than in eczema. It should never be prescribed if there is any disorder of the digestive system, nor in the acute stage of the disease, for under such conditions it is likely to do more harm than good. It is of most value in the chronic papular form and in the squamous stage. When it is used in full doses and for a long period, the urine should be occasionally examined for albumen, and the various organs and structures of the body generally investigated. The nerves, so readily affected by arsenic, should always be watched for signs of over-stimulation. The time at which to increase, decrease, or suspend the use of the drug calls for observation and judgment. There is no doubt that a vast amount of injury is done by the injudicious use of arsenic. It is a valuable but at the same time a dangerous drug. Unless prescribed to meet special indications and by a skilled and trained hand in cutaneous medicine, it is wise to forego its administration and to depend upon simpler drugs or upon local remedies only. The several preparations of arsenic and their mode of employment have been considered in the chapter on General Treatment, to which the reader is referred. Sodium arsenate is a milder preparation than potassium arsenite, and less apt to disturb the alimentary tract. The taste of the lavender in Fowler's solution is unpleasant to many persons, especially when taken for a long period. It may be remarked that not infrequently the best results from arsenic are to be obtained by employing it at first in small doses every two hours, increasing the quantity with every other dose, say, by half a minim of liquor sodii arsenatis, until in a few days from two to six minims are taken five or six times daily. Prescribed thus, large amounts daily are sometimes tolerated.

Tar sometimes proves beneficial, especially in chronic cases. It is best administered in pills or capsules, in ten or fifteen grain doses. It acts upon the vessels, constricting them, and thus may prove beneficial in sluggish cases; and the same may be said of ergot. But these remedies are not to be relied upon. Sulphur, in chlorotic and anæmic subjects, and sulphur waters (of which there are great numbers in this country), may prove serviceable in suitable chronic cases; but neither sulphur alone nor the waters of such springs can be depended upon. Unna and others speak highly of the value of ichthyol in eczema em-

ployed internally. It is of value in gastric and intestinal catarrhs and in rheumatic affections. It acts especially upon the peripheral capillaries, contracting them, and thus by improving the cutaneous circulation is of service in anæmic and chlorotic seborrhœic eczema. The dose is gr. v–x three times daily, preferably in gelatin-coated pills. The sulpho-ichthyolate of sodium is generally regarded as the best ichthyol salt for internal use, although externally the ammonium salt is usually preferred. *Viola tricolor* has been extolled by Hardy and Piffard, by the latter especially in vesico-pustular eczema of the scalp. It possesses decided diuretic properties. The imported herb only should be used. The latter recommends the fluid extract in one-drop dose for infants thrice daily, while for adults the dose may reach a fluidrachm. The indications for its employment, however, do not seem to be well defined. It is uncertain in its action and sometimes aggravates the disease.

In chronic eczema of long duration with thickening of the skin, pilocarpine is of value, especially in small doses and long continued, and preferably in the form of subcutaneous injections. By degrees the irritation becomes less, and the skin grows thinner and thinner. As a possible cure for chronic eczema in infants, vaccination remains to be mentioned. Sometimes it acts happily, completely dispelling the disease, after other therapeutic measures have failed.

In concluding the remarks upon the use of drugs in eczema I would repeat that if they are employed they must be selected as being appropriate for the case, and that in no instance should they be prescribed empirically. Where the indications are not plain it is better to withhold their administration altogether. No harm can then occur.

LOCAL TREATMENT.—Treatment by means of local remedies is of great importance, and demands the fullest consideration. Many cases may be relieved by external means alone. In one form or another local therapeusis is always called for. There are no cases in which it may not be used with great advantage.

SOME IMPORTANT GENERAL OBSERVATIONS.

It is a matter almost essential to successful treatment that a clear conception of the existing state of the skin and the form of eruption be obtained. The part affected should, if possible, be seen by the physician, that he may determine whether the disease is acute or chronic, and particularly whether the process is in its incipient or in its most active stage or is subsiding. The variety of the disease next presents itself for consideration; the primary lesions should be sought for, and the presence of erythema, papules, vesicles, or pustules, or the combination of these lesions, established. The stage in which the affection exists, and the amount of cutaneous disturbance, heat, redness, swelling, œdema, and other abnormal phenomena, are all to be noted, as well as the condition of the epidermis, whether intact or lacerated. The state of the epidermis

is a point of great importance, upon which the choice of remedies and their mode of application largely depend. The character of the crusts and scales, and the presence or absence of fissures, should also be observed. A matter of moment, moreover, to be ascertained before instituting treatment is the extent of surface involved: thus the whole body may be more or less affected, or there may be only a single small or large patch. The method of treatment may depend on the amount of surface to be cared for. The region attacked must also be taken into account, for it is well known that different localities are affected favorably or the reverse by certain remedies. Each patch of eczema should receive separate treatment, where this is practicable, thus endeavoring to prevent the coalescence of diseased areas. Finally, the duration of the disease, its general history as stated by the patient, and, in particular, whether a first attack or a relapse, are all matters of consequence.

Attention should be given to affording the patient as much comfort, rest, and sleep during the night as possible. The apartment should not be too warm, and the clothing should be light. As the irritation of the skin is always worse at night, the applications should be renewed just before retiring, and, as the impulse to scratch and rub is irresistible, the affected parts should be protected, and the hands should be encased in loose cotton gloves. Where the nights are restless notwithstanding the local applications, resort may be had to such remedies as chloral, ehloralamide, sulphonal, potassium bromide, acetanilid, and phenacetin. In infants and children chloral is particularly useful, in doses of one or two grains to a child two years old, repeated if required. Pye-Smith speaks well of a sleeping draught for adults composed of fifteen or twenty grains of ammonium bromide, ten grains of potassium bromide, and twenty drops of aromatic spirit of ammonia, in an ounce of camphor water. In old persons, for whom chloral may not be prescribed, from two to four drachms of hops or a drachm of tincture of hyoscyamus may be ordered. Opium is, as a rule, not useful in eczema, and in small doses is liable to aggravate rather than relieve the irritation. When employed, it should be used in full doses. The importance of rest and of freedom from all sources of general and local irritation is to be enjoined upon the patient. In acute disease of the general surface, and in subacute and chronic cases in which the extremities are invaded, much may often be done in the way of arresting the process by what may be termed judicious management.

WATER, BATHS, AND CLEANSING THE SKIN.

For washing purposes, where the skin is delicate, a soft or mucilaginous water made from bran or starch may be used. One pound of starch, two pounds of gelatin, or one pound of linseed meal, to the bath, may be employed. Too frequent washing and general bathing are to be avoided, as they have a tendency to macerate the already

weak and diseased epidermis. For cleansing the skin of scales, as in psoriasis, both the soda and potash soaps and alkaline lotions are made use of. In the majority of instances ordinary hard soap of a good quality suffices; but where they are adherent to the skin or exist in masses, soft soap may be resorted to, to be followed by some soothing oil or emollient application.

In many cases there are present certain other secondary products requiring immediate removal, such as adherent crusts and other extraneous matter, as ointments or lotions, which have been allowed to collect upon the surface. These must be removed before the remedies can be advantageously applied. Crusts, if extensive, are to be treated first with oils and oily preparations until saturated and loosened, or may at once be acted upon by water and soap or alkaline washes. The cleansing of the part where encrusted is a point of importance, and unless insisted upon will rarely be properly performed by the patient or attendant. Repeated applications of olive or cotton-seed oil, followed by soap and hot water, may be required to secure the desired end. A drachm or two of sodium bicarbonate or of borax to a quart of water, applied with compresses two or three times a day, will often suffice to cleanse dirty skin. An alkaline bath may be made of sodium bicarbonate, ℥vi-xii; potassium bicarbonate, ℥iii-vi; sodium baborate, ℥ii-vi; in thirty gallons of water. Starch added to alkaline baths and lotions often proves acceptable. Starch poultices, applied warm or cold, and changed frequently, are sometimes serviceable in acute, hyperæsthetic, weeping eczema. If too drying, they may be used alternately with a boric acid or a carbolic acid lotion containing a little glycerin.

Cloths steeped in hot water, as hot as can be borne, and wrung out and applied continuously for ten or twenty minutes or frequently to the parts, at times prove grateful and afford decided relief from the itching. This procedure is of particular value in subduing sudden and severe spells of itching in vesicular and moist eczemas, especially in eczema of the anus, vulva, and scrotum. The anus will frequently tolerate water nearly as hot as the surrounding skin will bear it. Sometimes hot water employed in this way not only relieves the inflammation, itching, and burning, but in addition acts as an adjuvant to other remedies. I do not think its value in eczema generally is sufficiently appreciated by practitioners. Employing water in this way, supplemented by other remedies, produces altogether different results from water or water and soap used for cleansing purposes. As with ointments, lotions, and various other local remedies, the mode of applying them is all-important.

METHODS OF TREATMENT.

Various methods of application are employed for the external treatment of the disease, consisting of ointments, pastes, plasters, soaps, lotions, liniments, jellies, tragacanth and other emulsions, varnishes, and

collodion and liquor gutta-perchæ, used either alone or in other ways and combinations. They all have their use and place in the treatment of eczema, the one or the other being selected to meet the requirements of the case. Inasmuch as they are fully considered in the chapter devoted to general therapeutics, especially so far as concerns the newer preparations, the reader is referred to that chapter for additional information as to their composition and method of use. Many formulæ useful in eczema will be found in that chapter. In describing the regional forms of eczema and their treatment, some remedies and formulæ of special value will be mentioned. That section will thus be supplementary to the present chapter.

ACUTE AND SUBACUTE ECZEMA.—Caution is to be observed in prescribing for acute eczema. Remedies which are well tolerated at a later stage of the disease will now, as a rule, prove much too stimulating. As to the choice of employing an ointment or a lotion in a given case no definite rules can be laid down, but the general advice on this point given by Hughes Bennett many years ago, to employ salves in dry and lotions in wet eczema, may be kept in mind as being likely to prove of some use. Whatever the remedy, it should be at first used over a small surface, in order to ascertain whether the effect is beneficial or otherwise. Among the many sedative and so-called soothing applications which from time to time have been recommended for the early stages of eczema, with a view of relieving the inflammatory symptoms and the itching and burning, I shall mention those only which are considered to be of most value. It must be borne in mind, however, that a preparation which has been of service in one case will not necessarily afford relief in another similar case bearing even the same general features. Individual peculiarities of skin have much to answer for. If, therefore, one remedy does not succeed, another must be tried; and here it may be remarked that it is at times extremely difficult to decide whether this or that formula is best suited to the case in hand. The patient will soon determine this question, however, by the amount of relief obtained. This is the chief end to which treatment in this stage of the affection is directed. In the zeal to relieve and cure the disease speedily, remedies that are too strong are often prescribed, and not infrequently with disastrous results. It is wise always to begin with mild applications. Over-treatment should be guarded against. It is a very common mistake.

POWDERS, LOTIONS, AND LINIMENTS.

In acute vesicular or erythematous eczema no soap or plain water should be employed; the parts should seldom be washed, for in the majority of instances water irritates the skin and is injurious. The epidermis in the vesicular variety requires protection or gentle stimulation rather than maceration. The corneous layer is defective or altogether wanting, and special treatment is demanded to improve the process of cornification. Starch poultices, especially cold, are occasionally soothing

and useful in the first stage of the disease. Flaxseed poultices, however, are objectionable, as they ferment rapidly and may irritate. The simple dusting powders often act happily in arresting the discharge and in subduing the inflammation. Five or ten grains of salicylic acid or of salol to the ounce may often be added with advantage. A dusting powder composed of arrow-root or starch and oxide of zinc with camphor is useful in some cases :

R Pulv. Marantæ, \mathfrak{v} i;
 Zinci Oxidi, \mathfrak{v} ii;
 Pulv. Camphoræ, gr. x-xx.
 M.—Sig. Dusting powder.

But the simpler powders are generally to be preferred. Powders composed of corn, potato, and rice starch may all be made use of. Protective and absorptive powders may also be made with lycopodium, talc (French chalk), carbonate of zinc (calamine), and carbonate of magnesium, in varying proportions, with or without starch. Lycopodium takes up only half its weight of water and no oil. Starch as an absorbent is inferior to several other substances. As an absorptive powder, magnesium carbonate stands high in the list.¹ Silicious substances take up water well. Prepared white fuller's earth, so-called "cimolite," is much used in Great Britain as a dusting powder, and is regarded by McCall Anderson as being by far the best substance for this purpose. It is a fine, scarce, natural variety of steatite, found most abundantly in Spain, and is composed principally of silicate of magnesia.

Instead of powders, lotions may be employed, and are generally preferable. In acute eczema they are often useful for their cooling effect on the skin: they should be renewed frequently, and should not be allowed to become warm. Occasionally, however, tepid or hot applications are more soothing than cold, especially in hyperæsthetic subjects. It is well to begin with them weak, gradually increasing their strength if required. I am in the habit of treating many cases of acute vesicular eczema, especially in the oozing stage, with lotio nigra and oxide of zinc ointment, according to the following plan. The part is to be bathed with the lotion, full strength or diluted with equal parts of lime water, to which five grains of tragacanth to the ounce may be added, applied lightly by means of a piece of cloth, for fifteen or twenty minutes at a time, and at intervals of eight or twelve hours. The sediment should be permitted to remain on the skin. After the application, oxide of zinc ointment is to be applied spread thickly on a muslin cloth, and bound on. The itching and burning are usually soon relieved, and the disease is often arrested in its course or cured. A lotion consisting of lead water, eight ounces; glycerin, one drachm, will be found useful.

¹ See chapter on General Treatment in the first part of this work for additional information.

It must be kept in mind that glycerin in all cases should be prescribed cautiously. Carbolic acid, a drachm ; glycerin, a drachm ; distilled water, six ounces, can also be recommended : the strength may be increased or diminished according to the relief obtained. Water dissolves carbolic acid up to five per cent. strength. The purer the acid the less soluble it is in water. A saturated solution of boric acid will often be found a very useful remedy. This lotion is constantly called into service in the treatment of acute and subacute eczemas, and is specially valuable in irritable erythematous eczema. In some cases its efficiency is increased by the addition of ten or fifteen minims of glycerin to the ounce. It possesses, moreover, the great advantage of being an innocuous and safe remedy. In acute weeping eczema a freshly prepared lead water with boric acid, fifteen grains to the ounce, is of value. Cocaine may be added to lotions with benefit in some cases, especially in hyperæsthetic eczema.

A valuable lotion, serviceable in some cases of subacute or chronic erythematous and papular eczema, is composed of:

R Potass. Sulphidi, gr. x ;
Zinci Sulphatis, gr. x ;
Aquæ Dest., f $\overline{3}$ vi.

M.—Sig. Shake. Dab on lightly for ten minutes.

This may be used full strength or diluted. Not infrequently it proves more serviceable diluted with two or three parts of water. I have found it especially useful in the chronic papular manifestation where the lesions resembled those of lichen planus. Glycerin may be added.

A cooling lotion is recommended by C. Boeck, of Christiania, composed of powdered talc and starch, of each 100 parts ; glycerin, 40 parts ; lead water, 200 parts. This is to be diluted with two parts of water. It is particularly useful in acute and subacute papular eczema, and in dry irritable and itching eczemas generally. It is not indicated in weeping eczema.

The following is useful in many cases of acute and subacute vesicular and erythematous eczema, as well as in superficial eczema madidans : one drachm of finely levigated calamine powder ; one drachm of oxide of zinc ; one drachm of glycerin ; and six ounces of water. It should be applied frequently, by means of a soft cloth, allowing the sediment to remain upon the skin. A similar simple and useful lotion is composed of oxide of zinc, one drachm and a half ; glycerin, a half drachm ; lime water, six ounces. To this may sometimes be added with advantage ten minims or half a drachm of “liquor picis alkalinus” or “tinctura picis mineralis comp.”¹ It should be kept in mind that tar, in whatever

¹ This is an alcoholic solution of coal tar prepared with quillaia. It is similar to, if not identical in composition with, the so-called “liquor carbonis detergens,” a proprietary article, as made by Wright & Co., of London. The formula for the manufacture of this preparation was published by the author in the Amer. Jour. of Med. Sci., May, 1894, and called by him “compound tincture of coal tar.” It is something more

form it is employed, in subacute or even in chronic eczema, is generally better tolerated used weak than strong. My experience has been that most practitioners employ it too strong. The following, similar to a formula much used by the elder Startin, of London, is useful :

℞ Pulv. Calaminæ, ʒi;
 Cretæ Præparatæ, ʒi;
 Acidi Hydrocyanici dil., fʒii;
 Glycerini, fʒii;
 Liq. Calcis, fʒiiiss;
 Aquæ Sambuci, fʒiv.
 M. et ft. lotio.

Linimentum calcis, alone or with other remedies, is of service in eczema madidans. A liniment composed of glycerin, rose water, oil of sweet almond, and lime water, containing ichthyol or thiol, one to five per cent. strength, may be used in the same variety of eczema. Upon discharging surfaces raw cotton may be used as a dressing after they have been painted on. It may be stated here that of the oils in common use olive is non-drying, linseed drying, and cotton-seed intermediate. All are of value as applications, and especially as liniments and emulsions. The author believes that it is not generally known that an oily, soothing, thick emulsion or soft creamy ointment may be made by shaking well together equal parts of lard and lime water. It is not a stable product, and consequently if kept long must be shaken or mixed before applying.

Fluid extract of *grindelia robusta* is a drug which is sometimes of service, used as a lotion, in the strength of about half a drachm to four ounces of water. It should always at first be used weak and cautiously, as it sometimes disagrees. It is especially useful in papular eczema, and in the subacute rather than in the acute stage. Distillate of witch-hazel may also be mentioned as an acceptable soothing astringent wash. In diffused papular eczema lotions containing glycerin or thymol or menthol, glycerin, and alcohol sometimes give relief to the itching, but I do not regard these drugs with special favor. They are very sparingly soluble in water. Where tar is tolerated in the subacute stage of the disease, it should be employed weak, in the form preferably of infusion of tar, "liquor picis alkalinus," or "compound tincture of coal tar." A lotion containing lead and coal tar is very often useful, especially in dry eczema, as in the following formula of Hutchinson. In some cases it may be prescribed weaker.

℞ Liq. Plumbi Subacetat., fʒss;
 Tinct. Picis Mineralis Comp., fʒss;
 Aquæ Dest., fʒviii.
 M.—Sig. Use freely as a wash.

than a tincture of coal tar. The terms "compound tincture of coal tar" and "compound tincture of mineral tar" are more correct and appropriate titles. The method of its preparation is given in Part I., in the chapter on General Treatment.

In *eczema papulosum* the inflammation is not diffuse as in the vesicular and erythematous varieties, but circumscribed, the papules being usually discrete in the beginning. The inflammation is plastic, and consequently of a different character, and generally pursues a more chronic course. Soothing applications may prove of little benefit here, the more stimulating remedies, as the various so-called antipruritics useful in the chronic stage of the disease, often being found of more service. Carbolic acid, as a lotion, is one of the most valuable remedies which we possess for this variety of *eczema*. The following formula will be found suitable for many cases :

R Acidi Carbolici, ʒi;
Glycerini, fʒi;
Alcoholis, fʒi;
Aq. Dest. ad fʒiv.
M.—Sig. Apply as a wash.

“*Tinctura picis mineralis comp.*,” fifteen minims to a drachm to four ounces of water, and “*liquor picis alkalinus*” diluted with water and glycerin, five or ten minims to the ounce, are also serviceable. Lotions are much to be preferred to ointments in this variety of the disease, but pastes are frequently as valuable here as they are in vesicular and in moist *eczemas* generally.

GLYCERIN-GELATINS, TRAGACANTH-MUCILAGES, SALVE-MUSLINS.

The glycerin-gelatin preparations, introduced by Pick and modified by Unna, are of value in subacute and chronic *eczema*, as in this formula :

R Gelatini, 15.0;
Glycerini, 15.0;
Zinci Oxidi, 30.0;
Aquæ, 40.0.
M.

The ingredients are melted and combined, and the resulting jelly is applied with a paint-brush. This is a tolerably hard, quickly drying, generally useful formula. To this base various active ingredients may be added, as in the case of the pastes. The gelatin is applied in a state of liquefaction, and has to be warmed in a tin or other vessel each time before being used. It forms a pliant, closely adherent coating, suitable for large areas, and has the advantage over some other preparations of being readily removable by washing. It dries slowly, and as a protection a thin layer of cotton or gauze may be stuck on. It is very useful in some forms of the disease. In addition to serving as the vehicle for various remedies, it may also be employed after the manner of collodion and *liquor gutta-perchæ* to cover with a coating obnoxious drugs, as tar and *ehrysarobin*.

In subacute and chronic *eczema*, especially of the leg, Pick's mode of treatment with the “gelatin-sublimate” sometimes gives good results. The formula for this glycerin-gelatin preparation is 30 grammes of gel-

atin mixed with sufficient water, macerated for several hours, liquefied on the water-bath, and evaporated to 75 grammes. To this are added 25 grammes of glycerin and 5 centigrammes of corrosive sublimate. When about to be applied the compound is liquefied by heat and a thin coating painted on the affected part. In the first part of this work, in the chapter on General Treatment, and with eczema erurum, other formulæ for glycerin-gelatins (called also "glyco-gelatins") may be found.

The glycerole of subacetate of lead, brought forward by Squire,¹ may here be referred to. It may be employed, in the strength of from fifteen to thirty grains to the ounce, in subacute and chronic eczema rubrum of the lower extremities, and is of most value where the disease is of a dusky-red hue, accompanied with weeping, infiltration, œdema, and swelling, and in varicose conditions.²

A "tragacanth-glycerin mucilage," composed of tragacanth 5 parts, glycerin 2 parts, boiling water 93 parts, to which are added 2 parts of boric acid (to preserve it), is of value in acute erythematous eczema, especially with oxide of zinc, 15 or 20 grains to the ounce. It is a distinctly cooling remedy, and is neat, cleanly, and acceptable. The original formula is due to Pick, called by him "linimentum exsiccans."

The numerous salve-muslin preparations devised by Unna and Beiersdorf, of Hamburg, are useful and cleanly means of applying certain remedies. The most useful in eczema are the litharge, litharge and ichthyol, litharge and carbolic acid, litharge and tar, oxide of zinc, oxide of zinc and salicylic acid, and oxide of zinc and ichthyol.³

OINTMENTS.

In many cases of acute vesicular eczema, however, ointments answer better than lotions. The oxide of zinc ointment is a well-known and excellent preparation, and may be employed either alone or as a medium for other remedies. Occasionally it is noted that the benzoin in the benzoinated ointment proves stimulating or irritating. A half-drachm or a drachm of spirit of camphor may in some instances be added to the ounce with advantage, as suggested by Erasmus Wilson. Excellent ointments are also made with carbonate of bismuth, one drachm and a half to the ounce, and with precipitated chalk, and prepared calamine, of the same strength. The petroleum products, petrolatum, cosmoline, vaseline, should not be used alone in acute eczema, as they occasionally

¹ Med. Times and Gaz., March 18 and 25, 1876.

² See a contribution to the subject, with cases, by Van Harlingen and the author, Phila. Med. Times, Aug. 3, 1878. The formula of Squire is as follows: Acetate of lead, 5 parts; litharge, $3\frac{1}{2}$ parts; glycerin, 20 parts, by weight. Mix, expose to a temperature of 350° F., and filter through a hot-water funnel. The clear viscid fluid resultant contains 120 grains of subacetate of lead to the ounce. This is used as a stock from which the preparations employed are made by dilution with glycerin.

³ See the chapter on General Treatment in Part I. of this work for formulæ and further information on these special preparations.

prove irritating. Lanolin is a good base for some ointments; thus, a half-draehm of bismuth to the ounce of lanolin is particularly useful in the eezemas of infants. Sometimes lard (in any form) irritates; in such cases cold cream ointment may prove entirely acceptable to the skin. The following formula for a cooling cold cream base, with which various drugs may be incorporated, can be recommended: R Rose water and oil of sweet almond, of each 10 parts; white wax and spermaceti, of each 2 parts: emulsify with sodium baborate one-half of one per cent. The subject of bases for ointments has been already discussed in the chapter on General Treatment. Zinc oleate,¹ in the form of an ointment, is recommended by Shoemaker and by Crocker as useful, in the following formula, lard being preferable to petrolatum:

R Zinci Oleatis, ℥iss;
Adipis Benzoinati, ℥i.
M. Ft. ungt.

The oleate and the subnitrate of bismuth are also serviceable in the form of ointments, of similar strength. Anderson has given the following formula for a soft soothing bismuth-oleic acid ointment, useful in many conditions. It is not a true oleate.

R Bismuthi Oxidi, ℥i;
Acidi Oleici, ℥viii;
Cerae Albæ, ℥iii;
Vasellini, ℥ix;
Olei Rosæ, ℥ss.
M. Ft. ungt.

The odor of the oleates, however, is that of rancidity. Camphor may be employed as an ointment, alone or with oxide of zinc and salicylic acid; also with equal parts of carbolic acid. The appended formula makes an acceptable mildly stimulating ointment which may sometimes be advantageously used in subacute vesiculation.

¹ The following directions are given for making the zinc oleate. Take one part of oxide of zinc and eight parts of oleic acid; stir together; allow to stand two hours; heat until dissolved. On cooling, a yellowish-white hard mass results, which may be variously made into an ointment. (Brit. Med. Jour., Oct. 26, 1878.) Dr. L. Wolff writes to the author as follows: "A true zinc oleate is best made by double decomposition of sodium oleate with zinc sulphate. The sodium oleate can be made by saturation of oleic acid with a solution of potassium hydrate and precipitation therefrom of the sodium oleate by sodium chloride. It is then expressed and dissolved in about eight times its weight of boiling water, and then the zinc oleate precipitated with a saturated solution of zinc sulphate. This precipitate is well washed with hot water, expressed, and reduced to an impalpable powder. For ordinary purposes zinc oleo-palmitate will answer. It is made by saponifying oil of sweet almond, dissolving the sodium oleo-palmitate so formed, and precipitating it in the aforesaid manner. Zinc oleate should be a white powder, of an unctuous touch, and perfectly soluble in warm oils or fats." Dr. J. V. Shoemaker has written extensively upon the oleates (Ointments and Oleates, especially in Diseases of the Skin. Phila., 1890).

R Pulv. Camphoræ, gr. x- Ḑ i;
 Zinci Oxidi, Ḑ ii;
 Adipis Benzoinati, Ḑ i.
 M. Ft. ungt.

In infantile eczema rubrum an ointment of boric acid, a drachm or a drachm and a half; balsam of Peru, five or ten grains; petrolatum, one ounce, is sometimes of value. A soothing ointment consists of

R Zinci Carb., Ḑ i;
 Acid. Salicylic., gr. x;
 Petrolati, Ḑ ii;
 Cerat. Plumbi Subacet., Ḑ vi.

M.

In pustular eczema the object of the application should be to alter the character of the secretion by destroying the pus cocci. Ointments containing iodoform or iodol, from three to five grains to the ounce, are useful; also eucrophen and sulphur, fifteen to thirty grains to the ounce, and other drugs which act favorably upon suppuration. In acute and subacute eczema with puriform discharge Piffard speaks well of a ten per cent. solution of hydrogen dioxide, full strength or diluted with one part of water, for reducing purulent exudation and thus permitting the formation of new epithelium. It also destroys bad odors. It may be used advantageously with an atomizer.

Dermatol, iodoform, iodol, and aristol, employed as powders or ointments, five or ten per cent. strength, are remedies which may sometimes be used in moist eczema, especially where this disease complicates simple ulcers of the leg. Fumigation with calomel will often prove highly beneficial in simple ulcers of the leg thus complicated, frequently healing them after many other remedies have failed.

Diachylon ointment, made according to the formula of Hebra, is a useful preparation, especially effective when spread upon cloths and applied closely to the skin with bandages. It should always be freshly made, and is prepared as follows:

R Olei Olivæ Opt., f Ḑ xv;
 Lithargyri, Ḑ iii, Ḑ vi;
 Aquæ, q. s.
 Coque et adde
 Ol. Lavandulæ, Ḑ iii.
 M. Ft. ungt.¹

¹ The following directions are necessary. The oil is to be mixed with a pint of water, and heated by means of a steam-bath to boiling, the finely powdered litharge being sifted and stirred in continually: the boiling is to be kept up until the minute particles of litharge have entirely disappeared. During the cooking process a few ounces more of water are to be added from time to time, so that when completed water still remains in the vessel. The mixture is to be stirred until cool. It should be of a yellowish color and of the consistence of butter. The best olive oil and the finest litharge should be employed. It does not keep well, soon turning rancid. It may also be made with four parts of diachylon plaster and two or three parts of olive oil, the two substances being melted, and stirred until cool. The proportion of the oil necessary to produce a firm ointment will vary with the consistence of the plaster.

A similar ointment may be made according to the following formula: Dry pure oxide of lead, one part; distilled water, one part; olive oil, eight parts; oil of rose, one drop to two ounces. Rub the oxide with water, add the oil, and heat on a water-bath to almost the boiling point until the oxide of lead has thoroughly combined with the oil, then cool with constant stirring. Another ointment is made with one part of oil of sweet almond to two parts of lead plaster, as suggested by R. W. Taylor. Equal parts of lead plaster and vaseline, as proposed by Piffard and Kaposi, also constitute an elegant ointment. Equal parts of diachylon ointment and oxide of zinc ointment form a serviceable soothing ointment. It is proper to state that in very rare instances poisoning from absorption of the lead in diachylon ointment has been noted.

Cold cream ointments, cucumber ointment (made from fresh cucumbers, and not from synthetical cucumber essence), and glycerole of starch, are all very useful soothing remedies. The water that cold cream ointments contain is often of great advantage, the effect upon the skin, owing to the evaporation of the water, being refrigerant. The following formula was published by Unna: Lanolin, 10 parts; lard, 20 parts; rose water, 30 parts. The resultant is a refrigerant, creamy ointment. It keeps well, and is a desirable product, of special value in cases where fats are not well tolerated by the skin. In this formula lead water may be substituted for rose water. A softer creamy ointment, called by Unna "eremor refrigerans," is made of lanolin, 10 parts; lard, 20 parts; rose water, 60 parts. Lime water may be substituted for the rose water with advantage in some cases.

PASTES.

Pastes rather than ointments are in many cases indicated. They have to some extent superseded ointments, and are much employed, often giving good results where ointments are not well borne. They were introduced some years ago, largely through Lassar, and are of great value in many varieties and stages of eczema. The following formula put forth by Lassar is a good stock base, useful either alone or with various ingredients which may be added to it:

R Zinci Oxidi, ℥ii;
Pulv. Amyli, ℥ii;
Vasellini, ℥iv.

M.

To this gr. x of salicylic acid may often be added with advantage, both of these formulæ being of great value in acute and subacute vesicular or vesico-papular as well as in irritable dry forms of the disease. It should not, however, be applied to hairy parts. Resorein and boric acid may likewise be employed with this base and in the same class of cases.

Resorcin, it should be remembered, turns brownish on exposure, owing to chemical change, although the addition of salicylic acid (gr. i ad ʒi) will to a great extent prevent this. Other remedies may also be combined with this paste, as ichthyol, tar, naphthol, sulphur, and mercurials.

While Lassar's paste is excellent, it tends to adhere somewhat to the clothing as well as to the skin, and when dry drops off in particles, rolls, and lumps, thus being sometimes a source of annoyance to the patient. Where boric acid is indicated and does not prove irritating, the following paste, without starch, the author has found adheres to the skin remarkably well, and is for this reason a neat and cleanly preparation: Boric acid, ʒii; zinc oxide, ʒii; vaseline, ʒss. Boric acid I have found by experiment possesses the property in a notable degree of stiffening pastes and ointments.

Ihle gives this formula for a paste; it is stiffer than Lassar's:

R Zinci Oxidi, ʒii;
Pulv. Amyli, ʒii;
Lanolini, ʒii;
Vaselini, ʒii.
M.

Equal parts of zinc oxide and petrolatum make a good soft paste. Zinc oxide and starch, of each, ʒii, and cold cream ointment, ʒiv, make a desirable stiff paste. Equal parts of oxide of zinc ointment and starch also make a stiff paste. Hyde advises talc as the chief ingredient, as in this formula:

R Zinci Oxidi, ʒii;
Talei, ʒiii-ʒiv;
Vaselini, ʒiv.
M.

The following formula makes a very stiff paste, remarkable for its adherent and drying properties: Lanolin, 65 parts; paraffin, 30 parts; white wax, 5 parts; mix, and add water 30 parts. As a protection and for cleanliness, a simple dusting powder may be applied advantageously over pastes.

A zinc-starch-salicylic paste containing glycerin is made as follows: Zinc oxide, 50.0; salicylic acid, 2.0; starch, 15.0; glycerin, 15.0; water, 75.0. Mix, and boil down to 140 parts. As already stated, glycerin, even in small quantity, is in many cases objectionable to the skin. Unna gives this formula for a lead paste: Litharge, 50.0; vinegar, 80.0; cook to the consistence of a paste, and add linseed oil, glycerin, or olive oil, 10 parts.

A useful kaolin-oil paste may be made as follows:

R Kaolin.,
Ol. Lini, āā 30.0;
Zinci Oxidi,
Liq. Plumbi Subacetatis, āā 20.0.
M.

This paste belongs to the zinc-starch-vaselin group. It possesses distinctly drying properties.

An adhesive, soluble paste, useful where fats are not tolerated, may be made by rubbing together equal parts of gum arabic, starch, zinc oxide, and glycerin.

It is often impossible to draw the line between acute and chronic eczema,—to state exactly when the former passes into the latter. In practice, however, it is found that the acute stage is brief, lasting usually from a few days to a week. The subacute stage is much oftener encountered, and is frequently persistent, but as a rule yields satisfactorily to mildly stimulating remedies. In the selection of methods of treatment and formulæ the physician should be guided rather by the pathological changes which have taken place than by the length of time the disease has existed. Some of the remedies to be referred to presently in speaking of the local treatment of chronic eczema may at times be used with benefit earlier in the course of the disease. This subject will be referred to again in considering the treatment of the disease as it attacks particular regions of the body.

CHRONIC ECZEMA.—After a few days or weeks, the acuteness of the process will in most instances have subsided, when other remedies will be found more serviceable. The disease, however, not infrequently begins subacutely, and sometimes even chronically. In some cases, where the skin is irritable and disposed to resent stimulating remedies, the treatment advised for the acute stage may prove most useful. More stimulating applications, however, are usually required. The temper of the skin will soon be ascertained, when the proper remedy and strength may be prescribed. The most useful remedies in chronic eczema may now be mentioned.

CARBOLIC ACID, CREASOTE, AND TAR.

Carbolic acid, in varying strength, is very useful, in the form of a lotion, an ointment, or a paste. It is a valuable and reliable antipruritic remedy. In the proportion of ten or fifteen minims to the ounce of an aqueous or alcoholic lotion or with an emulsion, it will be found serviceable in chronic papular, vesicular, and erythematous eczema; it may also be prescribed with lotions containing oxide of zinc and other powders. As an ointment or a paste it is most useful in the strength of ten grains to the ounce: much stronger ointments are apt to prove irritating rather than soothing. Creasote, from five to fifteen minims to the ounce, is also a valuable antipruritic. In this connection thymol and menthol may be mentioned, but, as elsewhere stated, they do not in my opinion rank high in the list. Camphor and chloral, of each from ten to thirty grains to the ounce of ointment, are much more useful, and will often relieve itching. Extract of stramonium, from one-half to one

drachm to the ounce, especially used with other drugs, is esteemed both by Piffard and by Bulkley.

Similar in effect to carbolic acid and creasote are the preparations of tar, the most servicable of all external remedies, their odor, however, rendering them in many cases objectionable. To obtain good results they must be used at the proper time and in suitable strength. Should they irritate, they of course must be abandoned, but not until a diminished strength has been tried. They are of most benefit when the disease has reached the chronic stage. In the acute stage they generally aggravate the condition. If there be much inflammation, swelling, and œdema, they should be withheld. The more chronic the condition, the more likelihood is there of their being tolerated. The mode of application, and the strength, are to be determined by the case. Ointments and oily pastes containing tar are useful, for, in addition to their stimulating properties, an emollient effect is obtained. They should at first not be too strong, from one scruple to one drachm of tar to the ounce being usually sufficient. In many cases a weaker ointment is more useful. The effect should in all cases prove grateful to the patient. The two forms of tar commonly used are *pix liquida* and *oleum cadinum*, although the crude *oleum rusci* (obtained from the common European birch) is more effective than oil of cade. They all have a similar effect upon the skin. *Pix liquida* is the least irritating, and is the best. Ten minims or half a drachm of "*tinctura picis mineralis comp.*" to the ounce of ointment will be found mildly stimulating. An elegant tarry ointment may be made with the following ingredients :

R Tinct. Picis Mineralis Comp., fʒss;
Zinci Oxidi, ʒi;
Ungt. Aquæ Rosæ, ʒi.
M.

In chronic, sluggish patches tarry ointments should not merely be smeared over the surface, but should be firmly or gently rubbed in for ten or fifteen minutes. Stimulation of the capillaries is the object. A small quantity only should be used for each application, which should be worked into the skin until it has been entirely consumed.

Hutchinson¹ thinks highly of the following formula, containing tar and chrysarobin, for suitable cases :

R Chrysarobini, gr. v-x;
Liq. Carbonis deterg.,² ℥x;
Hydrarg. Ammon., gr. x;
Adipis Benz., ʒi.
M.

Tar and the mercurials are combined with great advantage. In

¹ Arch. of Surg., vol. i., 1889-90.

² Tinct. picis mineralis comp. may be substituted.

chronic thickened patches tar is sometimes employed with excellent result combined with alcohol, as in the appended prescription :

℞ Picis Liquidæ (*vel* Ol. Rusci), ʒi-ii;
 Alcoholis, fʒvi;
 Ol. Rosmarini, fʒss.
 M. Sig.—To be rubbed in or painted on sparingly.

After several coats have been applied and have dried in, the surface may be covered with a zinc oxide paste and a dusting powder; or a bath may be taken, thus securing a “tar bath.”

It may be advantageously combined with soap in the treatment of thickened, leathery patches of chronic disease, in the form of equal parts of alcohol, *sapo mollis*, and *pix liquida*. To produce a stronger impression, potassa may be used in place of the soap, in the strength of ten or twenty grains to the ounce.

Bulkley has given the formula of a valuable alkaline tarry preparation, which possesses the advantage over plain tar of combining with water :

℞ Picis Liquidæ, fʒii;
 Potassæ Causticæ, ʒi;
 Aquæ Destillatæ, fʒv.

M. The potassa is to be dissolved in the water, and gradually added to the tar with rubbing in a mortar. Sig. “Liquor Picis Alkalinus.” To be used diluted.

It may be used in the form of a lotion or with an ointment. As a lotion it is to be diluted with water, from one to four drachms to the pint, according to the state of the skin and the effect desired. Caution should be observed not to make the mixture too strong at first, and in many cases it is more useful weak than strong. In infiltrated, localized patches it can be employed much stronger, as, for example, one part to five or ten parts of water, followed by the use of a soothing paste or ointment. Tar may be advantageously applied with contractile collodion, and also with liquor gutta-perchæ. In dry eczema, as an astringent, a chalk ointment containing a small quantity of tar ointment (one drachm to the ounce) will sometimes prove useful; likewise a five or ten per cent. tannic acid ointment.

As a substitute for tar Piffard gives the following formula: Salicylic acid, gr. x-xx; oil of lavender, ʒiii; oil of citronella, ʒi; oil of eucalyptus, ʒii; castor oil, ʒii; which is especially recommended in eczema of the scalp. Creolin, allied in its action to tar, may be mentioned as being useful in some cases, as an ointment and also as a lotion, in two to ten per cent. strength. It is a germicide and a stimulant, and mixes with water. It is of service in subacute pustular eczema. It contains several phenol compounds, but no phenol. In some cases compound tincture of benzoin, alone or with corrosive sublimate, answers well upon circumscribed patches.

SOAPS.

Various soaps, plain and medicated, are employed in the treatment of eczema. Medicated soaps are in some cases useful as adjuvants to other methods of treatment. They are described in the chapter on General Treatment in the first part of this work. The special soap to be prescribed will depend upon the case. Common hard, or soda, soap, of which the variety known as castile may be taken as a type, may be used for purposes of ordinary cleansing, but to obtain stronger detergent effects the potash, or soft, soaps are brought into requisition. It must be remembered that the majority of soaps are more or less alkaline, according as they are hard or soft and according to their quality, and that unless used judiciously they may be productive of harm. This remark applies particularly to the strong potash soaps known under the names of *sapo mollis*, *sapo viridis*, black soap, brown soap, and soft soap, which contain a variable amount of free alkali. *Sapo mollis* has numerous uses in eczema, employed alone or with alcohol in the form of an alcoholic solution. The formula in common use is known as "tincture of soft soap," and consists of soap two parts and alcohol one part. It may frequently be applied with advantage to cleanse patches of their crusts and scales previous to the use of other remedies.¹ As it is mildly caustic, an oily or fatty preparation should be applied immediately afterwards.

SOFT SOAP AND DIACHYLON OINTMENT.

It is in certain forms of chronic eczema *rubrum* that *sapo mollis* is of greatest value, employed systematically and in conjunction with an ointment. The more localized the disease, the better are the chances for success; in fact, it may be stated that, as a rule, this plan of treatment is to be adopted only in cases where the disease is confined to one or two patches. Where the eczema is diffused, and upon various regions, other methods answer better. In the common, chronic, localized, thickened eczemas of the legs, it is a useful mode of treatment, and may generally be relied upon when other remedies have failed.

The treatment consists in the application of the soap, followed immediately by the use of an ointment. Soft soap applied alone, in any form of eczema, acts as a mild caustic and as an irritant, and, as a rule, tends to increase the disease. This is a point never to be lost sight of, for much damage may be done by the indiscriminate and too free use of soap. The best ointment for the purpose is diachylon, provided it is freshly made. A lump of soap is smeared upon a wet flannel rag and rubbed into the skin until all traces of the soap have disappeared. The rag is then dipped into warm water and applied so as to make an abundant lather, when the diseased surface is thoroughly washed

¹ In order to secure uniform results from the soap, it is well to make use always of an article which is known to possess a definite strength.

off and dried. The amount of rubbing should be regulated by the degree of infiltration and the region affected, and the time occupied will be governed by the effect produced; in slight cases five minutes may prove sufficient, while in thick infiltrations, especially upon insensible regions of the body, fifteen minutes may be devoted to the operation. The first application should always be moderate, in order that too much destruction of epidermis be not produced. The sensations of the patient will serve as a guide upon this point. The application is not painful, as might be supposed, but, on the contrary, is usually agreeable, relieving the itching. The part immediately after the washing is red, the skin being clean, tense, and shining, with here and there minute puncta, from which serum oozes. An antiseptic lotion may at this stage be used with advantage.

The part is now ready for the ointment, which should be prepared before the washing is begun. It should be spread thick upon strips of soft, flexible muslin which have been cut somewhat larger than the size of the patch. The part is to be enveloped with the strips in a neat manner, so that no folds or wrinkles occur. Outside cloths should be applied, to prevent the oil from soiling the clothing, and the whole bound on by means of a bandage. This latter point is a matter of moment, for it is essential that the ointment be kept in close contact with the skin. The operation should be repeated twice daily. Usually improvement will be noticed at once, the patient obtaining relief from the itching at the first rubbing with the soap, and decided ease after the ointment has been applied. This mode of treatment was much in vogue formerly, and in the author's opinion is very valuable in selected cases.

Various manufactured ointment-muslins and plaster-muslins, as well as salve-pencils and paste-pencils, as described in the chapter on General Treatment in the first part of this work, may be made use of with benefit, according to the case in hand. These methods of application are convenient, cleanly, and often very useful. The indications for their employment require no special mention.

In subacute or chronic irritable vesicular or vesico-papular patches the following "salicylated soap-plaster," which should be spread on muslin or preferably thin kid and applied continuously, can be recommended by the author:

R Emplast. Saponis (U.S.P.) Liquefact., 90.0;
Ol. Olivæ Opt., 10.0;
Acid. Salicylici, 2.0.
M.

This formula gives an adhesive plaster of medium consistence and can readily be spread. It is a slight modification of Pick's¹ two original formulæ, which are—

¹ Verhandlungen der Deutsche Dermatologische Gesellschaft, I. Congress. Wien, 1889.

R Emplast. Saponat. (P.G.) Liquefact., 80.0;
Olei Olivæ, 20.0;
Acid. Salicylici, 2.5.

M.

R Emplast. Saponat. (P.G.) Liquefact., 100;
Acid. Salicylici, 5.

M.

The former of these is too soft to be generally useful, and the latter is rather too hard to spread with ease. Instead of salicylic acid, tar, carbolic acid, resorcin, sulphur, and the like, may be used. Plasters of this kind are especially beneficial in subacute and chronic infiltrated patches of eczema. The advantage of a stiff plaster is that it is not necessary to change it so frequently.

A useful stiff "compound salicylic acid plaster" (or "salicylic diachylon-soap plaster") which can be spread without or better with the aid of heat, and at the same time is sufficiently adhesive, is made according to the following formula¹ of H. G. Klotz:

R Emplast. Diachyli (U.S.P.), 60.0;
Emplast. Saponis (U.S.P.), 25.0;
Ceræ Flavæ, 2.0;
Vaselini, 8.0;
Acid. Salicylici, 5.0.

M. Sig.—"Emplastrum Salicylicum Compositum."

The salicylic acid is mixed with the vaseline and added to the liquefied mixture of the plasters as soon as the mass begins to stiffen.

After considerable experimentation with various substances, in varied combinations and proportions, I have arrived at the conclusion that Pick's softer formula modified so as to contain less olive oil (5 or 10 parts in 100, according to the strength of the salicylic acid) is the best pharmaceutically and practically. I recommend the following formula for a five per cent. plaster:

R Emplast. Saponis (U.S.P.), $\bar{3}$ i;
Olei Olivæ;
Acid. Salicylici, $\bar{a}\bar{a}$ gr. xxiv.

M.

This can be moulded and kept in rolls. For a large surface slight warming may be necessary to spread it easily. It is adhesive. For a ten per cent. plaster the following formula is better:

R Emplast. Saponis (U.S.P.) Liquefact., $\bar{3}$ i;
Acid. Salicylici, gr. xlviii.

M.

¹ This formula is a modification of that originally devised, and has been communicated to the author by letter. It is similar to that introduced by Dr. Klotz ("On the Advantages of a Compound Salicylated Plaster in Dermatological and Surgical Practice," *New York Medical Journal*, September 17, 1887), which has for many years been in successful use at the German Dispensary, New York City.

This can be spread without heat, and is adhesive. It can be kept in rolls.

The plaster mass of Klotz with vaseline is more lumpy and friable and less adhesive than that made with soap plaster and olive oil. The more salicylic acid is added to any of these plasters the softer they become, so that a considerably stiffer base is required for a twenty per cent. than for a five per cent. plaster. Up to five per cent. of the acid the plaster mass is not appreciably affected. In this respect salicylic acid is peculiar. Resorein, on the other hand, tends to stiffen the mass. Where twenty per cent. salicylic acid is needed, I can recommend the following formula for a sufficiently soft and adhesive plaster that spreads smoothly and with ease:

R Emplast. Plumbi (U.S.P.), $\mathfrak{z}\text{i}$;
 Cerae Flavæ, gr. xlviij;
 Acid. Salicylici, gr. cv.
 M.

For some cases of eczema, especially in the subacute stage, two rather than five per cent. of salicylic acid is indicated, but for chronic sclerosed forms with much thickening of the epidermis and corium, with hardened scale (as occurs especially on the sole of the foot), ten or fifteen per cent. is generally required. Plasters of this kind may be worn day and night, changed as may be necessary.

CAUSTICS, SCARIFICATION, VESICATION, BANDAGES, GALVANISM.

In old, much-thickened, callous or verrucous patches it is at times necessary to have recourse to a stronger caustic than *sapo viridis*, in which case a solution of potassa may be employed in strength from twenty to sixty grains to the ounce; but caution is required in the use of such remedies, which should in every case be employed by the physician himself. A few applications at short intervals should suffice. The effect of the caustic should be regulated by water compresses, after which unguentum diachyli may be used, as described. Occasionally, in very thick, leathery patches, repeated scarifications followed by diachylon or some other emollient ointment or plaster bound on will prove beneficial.

For obstinate circumscribed patches blistering with cantharidal preparations will occasionally be serviceable. A similar result may be obtained from carbolic acid diluted with two or three parts of alcohol, tincture of iodine, and a solution of silver nitrate (five or ten per cent. strength). In obstinate forms of localized eczema applications of this kind are in some cases very valuable. Occasionally counter-irritation over vaso-motor centres is useful in persistently recurring eczema. A mustard plaster may be applied to the nape of the neck or to the dorso-lumbar region, according to the locality invaded, just before an impending outbreak, which may thus be warded off or mitigated. Crocker

speaks favorably of this method in selected cases. Vulcanized india-rubber is a useful therapeutic agent, in the form of a solid rubber bandage or a sheet. As a roller bandage for the leg it is especially useful as a support to the weakened eczematous skin and subcutaneous tissue. It serves to protect the skin and to exclude the air, and sometimes has a curative effect, but in other cases it irritates and aggravates the disease. Sometimes it causes considerable mischief. Its effects should always be watched and noted. In circumscribed patches of recurrent erythematous and squamous eczema the galvanic current is occasionally of service.

MERCURIALS, SULPHUR, RESORCIN, ICHTHYOL, THIOL, CHRYSAROBIN.

There are numerous other remedies and modes of treatment for the chronic stages of eczema, some of which are of value. The mercurial preparations occupy the first place in the list, and are exceedingly useful in many cases, particularly where the disease is confined to a small area without tendency to spread. Ammoniated mercury and calomel are the most generally useful, in the strength of from ten grains to a drachm to the ounce. The red and yellow oxides, varying in strength from five to fifteen grains to the ounce, are of value. Certain other mercurials, as the corrosive chloride and the red sulphide, are useful in some cases. In rare instances persons are met with who are extremely susceptible to mercurials, especially corrosive sublimate. They should never be applied over extensive surfaces. Absorption of the drug, producing toxic symptoms, occasionally occurs, especially in children; also after the use of such remedies as tar, carbolic acid, ichthyol, and pyrogallol. Accidents of this kind, however, are so rare that their possible occurrence should not deter the physician from making use of them.

Not infrequently some of the mercurials may be advantageously combined with sulphur, as in the following formula, known in Germany as the "shepherd's salve," consisting of red sulphide of mercury, 1 part; sublimed sulphur, 24 parts; lard, 75 parts. It is useful in chronic eczema of the scalp as well as in many other subacute and chronic localized eczemas. Four grains each of red precipitate and mercuric sulphide to the ounce ("*unguentum hydrargyri rubrum*") is a serviceable ointment in the same class of cases; also equal parts of the ointments of acetate of lead, nitrate of mercury, and oxide of zinc, a combination known as "*unguentum metallorum*."

Sulphur may in like manner be advantageously combined with red oxide of mercury as an ointment, as follows: Ointment of red oxide of mercury, one drachm; sulphur ointment, three drachms; oxide of zinc ointment, four drachms. I have found a combination of blue ointment and oxide of zinc ointment, one part to two parts, of value in some cases of recurrent subacute eczema: for some cases it may be weakened advantageously.

Sulphur alone, in the form of an ointment, from one to three drachms to the ounce, at times acts beneficially, but in most cases it is useful much weaker, from ten to thirty grains to the ounce. It is particularly serviceable in seborrhœic eczema, and especially as a weak ointment. In a few cases of chronic eczema madidans of the leg I have had excellent results from it used strong, but its action is uncertain, and hence it must be employed cautiously.

In seborrhœic eczema, especially in the dry, scaly stage, the following zinc-sulphur paste ("pasta zinci sulphurata"), suggested by Unna, can be recommended :

R Zinci Oxidi, 6.0;
Sulphuris Præcip., 4.0;
Terræ Siliceæ, 2.0;
Adipis Benz., 28.0.

M. Sig.—Spread thickly on skin; cover with a thin layer of cotton.

For indolent, indurated circumscribed patches of chronic eczema the following ointment (known as Hebra's modification of "Wilkinson's ointment"), rubbed in, is much in vogue in Vienna :

R Sulphuris Sublim.,
Ol. Fagi (*vel* Rusci), āā ʒii;
Saponis Mollis,
Adipis, āā ʒiv;
Cretæ Præp., gr. xxiv.

M.

In some cases it may be advantageously weakened, but its value is in its stimulating property.

Boric and salicylic acids are also made use of, as in the acute and subacute forms of the disease. Boric acid ointment, thirty to ninety grains to the ounce, will sometimes be found useful in mild cases of chronic erythematous eczema; and, where ointments are not tolerated, a saturated aqueous solution of the acid applied with compresses may sometimes be used with benefit.

Resorcin, owing to the fact that it possesses a peculiar action on the epidermis, causing the cells to swell, is of value in some cases of eczema; especially where the disease is seated superficially. When it is tolerated, it tends to heal abrasions, fissures, and other lesions of the epidermis. Where the skin is infiltrated it does not prove so useful. It may be employed as a lotion, ointment, or paste. It is a remedy, however, which cannot be depended upon, for not infrequently it proves irritating. It is of most value in seborrhœic eczema. The following formula will be found serviceable in some conditions :

R Resorcini, ʒi;
Glycerini, fʒss;
Aquæ, fʒiv.

M.

This may be applied as a wash or with a cloth bound to the part and covered to prevent evaporation. Sometimes the resorcin may be employed weaker with benefit, while in other cases a stronger wash is more useful. It may also be prescribed with a zinc and starch paste, or as an ointment, in similar strength. It should be prepared freshly, as it does not keep well, although the addition of a few grains of salicylic acid preserves it. In seborrhœic eczema resorcin fifteen grains to the ounce, or naphthol five or ten grains to the ounce, is useful. In small papular eczema occurring as a subacute eruption and tending to frequent recurrence, I have found a resorcin lotion, fifteen or twenty grains to the ounce of water, particularly serviceable, especially in delicate sensitive skins that would not have tolerated most other remedies. In chronic patches of eczema madidans or rubrum resorcin may also be employed strong with glycerin, one or two drachms to the ounce, the skin being painted with the solution. In some cases it acts very happily. A formula prized by Unna for seborrhœic eczema is composed of

R Resorcini, $\mathfrak{z}\text{i}$;
Glycerini, $\mathfrak{z}\text{i}$;
Alcoholis, $\mathfrak{z}\text{ii}$.

M. Sig.—To be diluted with water.

This is to be diluted with four times the amount of water or chamomile tea. It is applied with a thin layer of cotton wool, and covered with some water-proof material.

Ichthyol and thiol, from two to ten per cent. strength, are both useful remedies, and may be prescribed where tar and sulphur would seem to be indicated, but where these drugs are not tolerated by the skin. Thiol has the advantage of having much less odor than ichthyol. These remedies are keratoplastic in their action, tending to repair the weak and diseased epidermis. They belong to the "reducing" remedies, withdrawing oxygen from the tissues; cocci are thus deprived of an important vital agent. They act especially by contracting the capillaries, and are thus useful when the general peripheral cutaneous circulation requires additional force and tone, as in seborrhœic eczema. They are useful in acute as well as in chronic eczema. The sodium salt of ichthyol is generally regarded as milder and less irritating than the ammonium salt. As in the case of tar and some other drugs, absorption, giving rise to stupor, has been noted in rare instances to follow its use in children, especially when employed over considerable surface in an ointment.

In the papular eczemas of children, ichthyol, gr. x-xxx to one ounce of diachylon ointment, will often prove beneficial. It is well to begin with a weak ointment and gradually to increase the strength. In pustular eczema it frequently proves of service, gr. v-xx to the ounce of zinc oxide ointment or paste. It may also be added to calamine and zinc oxide lotions.

Ichthyol may also be applied in the form of a varnish, composed of ichthyol, 40 parts; starch, 40 parts; concentrated solution of albumen (prepared at a moderate temperature), $1\frac{1}{2}$ parts; water enough to make 100 parts. The starch is first moistened with the water; the ichthyol is then triturated with it; and lastly the solution of albumen is added (Unna). This varnish dries within two minutes, and can be easily washed off.

In chronic eczema where there are considerable infiltration and thickening in localized areas, both chrysarobin and pyrogallol ointments and plasters, from one-half to three per cent. strength, or even stronger, may be employed, always with due caution.

Prognosis.—This must depend materially upon the circumstances attending the case. It may, however, be stated that the disease is almost always curable. There are a number of points which should be taken into consideration before an opinion is given as to the probable duration of an acute or a subacute attack or of a case of chronic disease. The general health is in the first place to be investigated, and in this connection the cause of the disease is, if possible, to be ascertained. In multiform, diffused, chronic eczema this question is one of the greatest importance, upon which the prognosis may largely depend. The variety of the disease is next to be determined, and whether the elementary lesions appear in a regular manner or incline to irregularity and polymorphism.

It is well known that certain varieties of eczema usually run an obstinate and long course, while others under favorable conditions tend to recovery after reaching a certain stage. Acute inflammatory eczema vesiculosum, for example, is apt to run a short and definite course, while, on the other hand, eczema papulosum is prone to be chronic. It is important to ascertain whether the disease is acute or chronic, and whether the process tends to terminate spontaneously or to run on indefinitely with secondary changes and complications. The stage of the eruption is also to be taken into account, as well as the duration of the disease, and, further, whether it is a first attack or a relapse. The eczemas of infants and children are, as a rule, amenable to treatment. In my experience they prove less rebellious than those of adults of like variety and gravity.

The location of the eruption is also to be considered, for eczema of certain parts of the body is almost invariably obstinate. Upon the scalp and the ears it is usually troublesome and tends to become chronic, likewise about the eyelids and the mouth. Eczema of the scrotum is generally rebellious. About the legs in elderly people, particularly if complicated with varicose veins or ulcers, especially in the working class and in stout subjects, it is also more or less intractable.

REGIONAL FORMS OF ECZEMA, THEIR DIAGNOSIS AND TREATMENT.

Eczema may show itself upon any part of the body. No region is exempt. The mucous membrane as well as the skin may be invaded, but the disease may be regarded as one which mainly concerns the skin. The mucous membrane is only exceptionally involved. It may be invaded either by extension from the skin or by the disease beginning here, and in some cases it is confined throughout its existence to this membrane. Eczema may manifest itself upon a small portion of the body only, or it may involve the greater part or the whole of the integument. When the entire surface is affected, it is termed *ECZEMA UNIVERSALE*, the variety of the disease being in this event generally erythematous, vesicular, or multiform; but so extensive a distribution is of rare occurrence. Usually it appears in the form of one or more rounded or irregularly shaped patches, varying in size from that of a small coin to that of the palm of the hand. These patches tend to become confluent, larger areas being thus formed. It attacks certain regions of the body in preference, and, as it exhibits peculiarities of appearance and course according as it is located upon one part or another, it is necessary to give a description of these so-called regional forms. Their differential diagnosis and special treatment will be considered at the same time.

ECZEMA CAPILLITII.—The disease is frequently encountered upon the scalp, usually in the erythematous, vesicular, squamous, and pustular varieties. The erythematous variety, as a rule, tends from the beginning to take on a chronic course, and soon settles into the condition known as squamous eczema. The patches are small or large, usually irregular in shape and ill defined, and may occur singly, as is generally the case, or in numbers, or the disease may involve the entire scalp. The occipital region is particularly prone to be attacked, both in children and in adults. In children the scalp is the region most frequently invaded. In a series of cases reported by E. Schiff,¹ of Vienna, the disease manifested itself here in 230 among 449 cases of eczema, and upon the face in 57 cases. The author's experience shows a smaller percentage. In adults, on the other hand, the scalp is much less frequently attacked than the general surface. The itching is generally marked.

Vesicular eczema occurs upon the scalp in the form usually of one or more small or large patches. The vesicles rupture or are scratched open early, a moist or weeping, partly crusted, patch existing. The discharge may be slight or copious.

The pustular variety is much commoner in children and young persons than in the middle-aged or elderly. It exists either in the form of a few pustules occurring here and there, or, as is much more likely

¹ Wiener Med. Wochenschr., March 23, 1889.

to be the case, takes possession of large areas or the greater portion of the entire scalp. The pustules often appear in considerable or in large numbers; they may or may not rupture, the fluid drying into greenish-yellow or brownish crusts. As the process goes on and new pustules are produced, which follow the same course, the crusts become thicker and more bulky, until in time the scalp may be more or less covered with crusts. The hair mats and cakes, the sebaceous secretion collects and mixes with the puriform eczematous fluid, and soon the scalp becomes offensive. This description represents a typical eczema pustulosum, which applies to adults as well as to children. Not infrequently, on the other hand, the lesions are fewer, discrete or confluent, and disseminated. The disease may last a few weeks only, or, it may be, months or years. The itching is not so violent as in the other varieties, but considerable or much heat and burning may exist.

Accompanying severe pustular eczema of the head marked swelling, induration, and enlargement of the subcutaneous glands of the neck commonly occur, particularly about the back of the neck and back of the ears. These glands are sympathetically affected, increasing and diminishing in size as the disease of the skin is worse or better. They rarely suppurate, but may continue enlarged until the eczema disappears. Small abscesses are often met with upon the heads of weakly infants and children, which tend to complicate the original affection.

Pediculi are not infrequently found in connection with eczema capitis in children, either as a primary cause or in consequence of the matted condition of the hair constituting a favorable habitat for them. They are common among the poorly nourished and ill cared-for, and their presence or absence should in all cases be determined at once. When present they are mischievous, and call for immediate destruction. They are apt to escape notice, owing either to the fact of their not being numerous, or to long and thick or matted hair, which may conceal them. The nits, however, are usually to be found, adhering to the hairs, and remote from the scalp. It frequently happens that, while nits exist in abundance, the parasites either escape detection or are not present at the time. In rare instances maggots are encountered in the scalp, having their habitat upon a raw surface covered with pus and crusts. Shoemaker¹ records having met with a case in a girl aged fourteen, whose scalp beneath the eczematous crusts was filled with them.

DIAGNOSIS OF ECZEMA OF THE SCALP.

The diagnosis of eczema of the scalp is at times difficult; it may be confounded with psoriasis, seborrhoea, syphilis, tinea favosa, and tinea tonsurans. It may often be distinguished from psoriasis by its tendency during some period of its course to show moisture, psoriasis never being moist. In eczema the edges of the patches are seldom abrupt, usually

¹ Practical Treatise on Diseases of the Skin. New York, 1892.

fading away into the healthy skin, whereas in psoriasis they generally have defined borders. Eczema shows crusts if there has been any fluid exudation, or small or fine scales if in the squamous stage; psoriasis presents dry, thick, imbricated, whitish or yellowish scales, in most cases in profusion. Eczema may or may not involve the head alone, but psoriasis of the head usually shows signs of its presence at the same time upon other regions of the body. Eczema is generally more itchy than psoriasis. In doubtful cases, the history and course of the affection may be of service in arriving at a diagnosis.

Eczema and seborrhœa not infrequently bear a close resemblance to each other, and may even exist in combination, the two processes thus constituting seborrhœic eczema. Eczema is prone to occur in patches, which, however, may not be numerous, whereas seborrhœa often invades the whole scalp uniformly, or in numerous, variously sized, ill-defined patches. The vesiculation, discharge, and consequent crusting of eczema are to be remembered, symptoms which are absent in seborrhœa, the product of the glands being composed of fine or coarse scales, usually of an oily, greasy nature, which in the common variety of the disease cake together and adhere to the scalp. Eczema is a more acute and rapid process than seborrhœa, and often makes its appearance suddenly; seborrhœa, in almost all cases, develops by degrees. Eczema is markedly itchy; seborrhœa is seldom so to the same extent, and often not at all so. Patches of squamous eczema are more or less red and infiltrated; those of seborrhœa are generally pale red or distinctly anæmic and bluish, and are not so infiltrated as in eczema. It will be kept in mind that in seborrhœa there are distinct signs of involvement of the cutaneous glands. In some cases of seborrhœa the sweat glands as well as the sebaceous glands are involved.

Eczema can be confounded with tinea favosa only when it is of the pustular variety. In eczema the crusts are the result of previous pustules, whereas in tinea favosa they are peculiar, having begun primarily as crusts. In eczema they are yellowish, greenish, or brownish, while those of tinea favosa are lemon or sulphur yellow, and, moreover, when perfectly formed, are cup-shaped, circular, and discrete or confluent. They tend to preserve their original shape, form slowly, and are dry and friable. Sometimes the irritation of the skin produced by the parasite is such as to cause a suppurative dermatitis under the crusts, in which event the diagnosis may be more difficult. The odor of an eczematous scalp is often nauseous; that of tinea favosa, where the disease is extensive, is characteristically mousy. The microscope will establish the diagnosis, the crusts of tinea favosa being composed almost entirely of fungus in the form of spores and mycelia, whose elements may be readily discovered under a power of two or three hundred diameters.

Eczema erythematosum or squamosum may be mistaken for tinea tonsurans. Not infrequently the diagnosis is difficult, especially in ill-

defined, chronic cases, until the microscope is employed. The following clinical features may be mentioned. The patches of eczema are seldom attended with loss of hair; in tinea tonsurans many of the hairs are broken off more or less uniformly about a sixteenth of an inch beyond the scalp, the hair in marked cases having a nibbled look. The follicles, moreover, are obviously diseased, swollen, and raised, in many cases causing the skin to have a goose-flesh appearance. The patches of recent tinea tonsurans are often circular; in eczema they are usually irregularly shaped and seldom sharply defined. The hairs in tinea tonsurans have a lustreless, dried, twisted, brittle appearance, and may be extracted readily, whereas in eczema they are firmly seated. In dark-haired subjects the scalp often has a dull leaden color in tinea tonsurans, and even in light-haired subjects the inflammatory symptoms are rarely so marked as in eczema. Where tinea kerion exists, however, and where the disease is chronic, the diagnosis may be more difficult. In doubtful cases the microscope should always be employed. The itching in eczema is marked; in tinea tonsurans it is often slight or wanting. A history of contagion is frequently to be found in connection with tinea tonsurans.

Certain forms of late syphilis of the scalp may sometimes resemble eczema, but such cases are rare. The crusts may be similar, but there are generally signs of ulceration in syphilis, which are wanting in eczema. The ulcers have abrupt edges, and unhealthy-looking, grayish bases, with a thick, creamy, or streaked secretion. There is no itching of any moment in pustular syphilis, whereas in vesico-pustular eczema it is usually marked. The odor attached to ulcerative syphilis of the scalp is generally penetrating and disgusting. The history of the case may prove of value in the diagnosis.

TREATMENT OF ECZEMA OF THE SCALP.

The treatment will depend upon the variety of the disease and the stage, and upon the age and general health of the patient. If the case be of the pustular variety, the crusts should be thoroughly removed by saturating the scalp with olive or sweet almond oil and then washing with water and soap. If they be bulky and adherent, it may be necessary to allow the oil to remain on all night, a flannel cap or bandage being employed. In severe acute cases, where the pustules appear from day to day, the application of black wash with five or ten grains of carbolic acid to the ounce, followed by a mild salicylic acid ointment, may be used. I would here remark that in acute eczema, whether of the scalp or of other regions, carbolic acid should always be used weak, about ten grains to the ounce. Olive oil containing ichthyol gr. x-xx to the ounce is often serviceable. Elliot recommends as being cooling and acceptable equal parts of oil of almond and lime water as a vehicle for the ichthyol. In subacute vesicular or weeping eczema of the scalp a

salicylic acid ointment of from five to ten per cent. strength is serviceable, under which the discharge in some cases ceases quickly.

Weak sulphur ointment, ten to twenty grains to the ounce, with a lanolin base, is sometimes valuable, especially in children, where there is crusting; naphthol ointment, five or ten grains to the ounce, is also of service in similar cases.

Medicated soaps, both hard and soft, but especially the former, as sulphur, salicylic-sulphur, resorein, tar, and the like, are often distinctly useful in squamous eczema of the scalp, and constitute easy and cleanly methods of applying many remedies to this region.

In chronic cases a lotion of creolin, one drachm to eight ounces, may prove beneficial. Calomel and ammoniated mercury are also to be recommended,—in some cases weak, in others a half-drachm to the ounce. A useful stimulating ointment consists of acetanilid, one drachm; petrolatum, one ounce. Europhen is of value in checking suppuration, used in powder alone or with boric acid; also in the form of a ten per cent. ointment with lanolin or with equal parts of lanolin and petrolatum. It is one of the best substitutes for iodoform, and does not irritate inflamed skin. In the vesicular and weeping variety a solution of silver nitrate, one or two per cent. strength, followed by a soft bismuth ointment, will sometimes prove serviceable. It is rarely, if ever, necessary to shave or to cut the hair. The value of a head of hair for a woman more than counterbalances the slight benefit to be derived from its removal. In young children, however, in some cases, especially if complicated with pediculi and nits, it may be cut in order to expedite the cure.

Patches of chronic squamous eczema generally require stimulating remedies. Among the more valuable are the tarry preparations, in the form of ointment or lotion, which, in one strength or another, will prove beneficial in most cases. One drachm of tar or of oil of cade to the ounce of alcohol, and a tincture composed of equal parts of *sapo mollis*, tar, and alcohol, are suitable for dry, sluggish, chronic cases where decided stimulation is required. A milder preparation, composed of half a drachm of oil of birch or oil of cade to the ounce of oil of sweet almond or simple ointment, is often useful; while frequently a still milder application is required, such as a lead water and tar lotion much prized by Hutchinson, composed of one drachm of solution of subacetate of lead, one drachm of compound tincture of mineral tar, and one pint of water. Superficially seated disease, whether acute, subacute, or chronic, should at first always be treated with weak remedies, like the lotion referred to, or with some mild ointment, as, for example, a two or three per cent. salicylic acid or tar ointment. One of the best stimulating ointments consists of two or three drachms of citrine ointment to the ounce. Citrine ointment should always be freshly prepared. Instead of weakening the official ointment with lard, it may be rubbed down with olive oil or oil of almond to the consistence of thick cream at the

time of making the application; used thus it is more readily applied, and without friction. In chronic cases with thickening of the skin requiring considerable stimulation I have used the following with benefit:

R Sulph. Sublim., ʒi;
Ol. Rusci, ʒi;
Sap. Mollis, ʒii;
Adipis Benz., ʒvi.

M.

The following ointment containing tannic acid is serviceable in some cases of mild eczema rubrum:

R Acid. Tannic., ʒss-ʒi;
Acid. Carbolic., gr. x;
Ungt. Picis, ʒss;
Ungt. Aquæ Rosæ, ʒviiss.

M.

ECZEMA FACIEI.—The face is a common seat of eczema, in both the acute and the chronic form. The erythematous variety is often encountered in adults in patches about the forehead, nose, cheeks, and mouth. The vesicular and pustular varieties are also common in children. Where the disease of the scalp is extensive, it is apt to spread somewhat over the forehead. The surface may be simply red, infiltrated, and slightly squamous, or may show signs of moisture and crusting. But in adults moisture and crusting do not often occur, the disease usually manifesting itself in the erythematous variety. Eczema of the face occurs much more frequently in infants and children than in adults. Pustular eczema of the face in children is to be distinguished especially from impetigo simplex and from impetigo contagiosa. The nose, especially about the alæ and nares, is not an infrequent situation for erythematous eczema in adults. The itching and burning are generally severe, and it is usually stubborn. Carbolic acid here in the form of lotion is particularly useful; though sometimes an ointment gives more relief. The oxide or oleate of zinc, a drachm to the ounce, with ten grains of carbolic acid and thirty grains of calomel, and a salicylic-zinc-starch paste, may also be recommended. In some cases of chronic, hyperæsthetic, erythematous eczema of the face in elderly persons I have found the following ointment useful:

R Camphor., gr. xxxv;
Empl. Plumbi, ʒiii;
Petrolati, ʒiii;
Ol. Olivæ, ʒi.

M.

Occasionally we meet with cases of weeping eczema of the face, as well as of other regions, that are greatly benefited by tar, but, as this remedy is somewhat uncertain in its action in any stage of the disease, its employment in weeping eczema should be cautiously experimental. In the pustular eczemas of children, especially when accompanied with



ECZEMA.

CHRONIC, ERYTHEMATOUS VARIETY, OF THE FACE.

The subject is a man over eighty years of age, blind, but in good general health. The disease is of many years' standing, confined to the face, and shows much infiltration, causing thickening and corrugation of the skin. The natural lines and furrows of the face are all exaggerated, due to the long-continued, localized inflammatory process, together with consequent rubbing and scratching. The general appearance suggests a likeness to the well-known infiltration so commonly met with in tubercular lepra of the face. (Dr. FRANCIS J. SHEPHERD'S case.)



ECZEMA.

SUBACUTE, PAPULAR VARIETY, OF THE FACE.

The disease occupies the entire face, as well as the neck, of an elderly woman. The lesions are symmetrically distributed, disseminated, and in certain localities aggregated, especially upon the cheeks. Duration four weeks. (Dr. HENRY G. PIFFARD'S case.)

keratitis, a weak tar ointment, one to three per cent. strength, is sometimes beneficial. Bulkley recommends as soothing for some cases a calamine and zinc ointment with camphor, as the following :

R Pulv. Calaminæ Præp., ℥i;
Zinci Oxidi, ℥ss;
Tinct. Camphoræ, ℥ss;
Ungt. Aquæ Rosæ, ℥i.

In other cases a weak tannic acid ointment, ten grains to half a drachm to the ounce of cold cream ointment, and five or ten grains of carbolic acid, is more useful.

Lotions are to be highly commended in erythematous eczema of the face, affording, as a rule, more relief than other modes of treatment. The addition of five or ten minims of glycerin to the ounce often renders them more soothing. Some of the most useful possess the advantage of being generally cleanly and unobjectionable. Boric acid lotion; zinc oxide and calamine (equal parts) and lime water lotion; "compound zinc sulphide lotion," one or two grains of each salt to the ounce; lead water; and a weak ichthyol lotion, are soothing and acceptable in many cases. A simple formula which the author frequently uses successfully in chronic, irritable, superficial erythematous eczema of the face, particularly in elderly persons, is as follows :

R Acid. Boric., ℥iiss;
Glycerini, ℥ss;
Aquæ Dest., ℥vi.
M.

"Tragacanth-glycerin mucilage," with ten or fifteen grains of zinc oxide to the ounce, I have often found a refreshing, cooling application in erythematous eczema of the face. With this formula may be incorporated in suitable cases ten grains of carbolic acid or five minims of compound tincture of mineral tar. Emulsion of almond, ℥iv; bismuth subnitrate, ℥i; dilute hydrocyanic acid, ℥ii, is also at times acceptable in the same variety of the disease. In obstinate cases of infantile multiform eczema of the face recourse may be had with great benefit sometimes to applications of tincture of iodine, and also of solution of silver nitrate three or five per cent. strength. In some cases, however, one-half to one per cent. solutions of the latter prove healing and more valuable.

IN ECZEMA OF THE NARES with follicular involvement glycerin and its preparations will often be found of special value, as Duckworth and Hardaway have pointed out, employed alone or in the form of glycerole of subacetate of lead; and the author has also found boric acid ointments and lotions valuable in these cases.

ECZEMA LABIORUM.—The disease occasionally attacks the lips, either alone or in connection with other parts of the face. One or both lips may be affected. The symptoms are swelling, redness, marked heat, infiltration, oozing of serous or puriform fluid, and crusting or scaling, with

frequently fissuring. The vermillion of the lips and the mucous membrane may be attacked, singly or together. The mouth may be contracted and fissured, and the lips upon awakening may be glued together by the exudation, motion being interfered with; while the mucous membrane may be so involved as to be partly deprived of epithelium, when there may exist soreness and even pain. Vesicles are not infrequently present, but usually they are partially or wholly macerated.

Both herpes labialis and syphilis possess features which may be confounded with this form of eczema. Herpes runs an acute course, lasting only a short period, and, moreover, shows itself in the form of a group or of several groups of vesicles. Eczema invades a greater amount of surface, and, occurring here, is almost invariably obstinate in its course. Syphilis localized about the mouth has a predilection for the angles, where the fissures are often deep and generally secrete a puriform product.

The peculiar affection known in France as "*perlèche*," as described by J. Lemaistre and by Paul Raymond,¹ due to the "*streptococcus plicatilis*" (and, Raymond thinks, also to other microbes), in which the epithelium becomes white, raised, fissured, and macerated, may be confounded with eczema of the lips. This affection also resembles herpes simplex and syphilitic mucous patches.

The local treatment of eczema of the lips and mouth is difficult, and is necessarily attended with discomfort for the patient. Either strong, positive remedies or, on the other hand, mild applications are generally found to be of most service. Thus, strong potassa or nitrate of silver solutions; carbolic acid and alcohol, or carbolic acid and glycerin, a drachm to the ounce; and other similar strong remedies, are often demanded. In some cases, however, the lips will not tolerate such heroic treatment, more relief being obtained from emollient ointments and lotions, such as glycerin and water one to eight; boric acid lotions; infusion of tar and glycerin; medicated tragacanth-glycerin jelly, or emulsion of oil of sweet almond; borated vaseline, and like preparations.

ECZEMA LINGUALIS.

This is sometimes met with, and will be referred to here from the stand-point of diagnosis. It is to be distinguished from a rare and peculiar disease which has been described under the names of "*lingual psoriasis*," "*marginata exfoliative glossitis*," "*lingua geographica*" ("*map-tongue*"), "*transient benign plaques of the tongue*," and "*wandering patches of the tongue*," names sufficiently expressive to convey a picture of the more prominent clinical features. As showing its association sometimes with eczema, an unusual case may be referred to. In a severe, chronic, and rebellious case of universal multiform eczema that has been under my observation at intervals during the past fifteen

¹ *Annales de Derm. et de Syph.*, July, 1893.



ECZEMA.

CHRONIC, VESICO-PUSTULAR, CRUSTED VARIETY.

The disease, occurring in a young child, is confined to the face, as is frequently the case in this common variety of infantile eczema. The cheeks especially are affected, the crusts being adherent. Duration three months, with a history of exacerbations, characterized especially by weeping on the cheeks. (The Author's case, University Hospital.)



ECZEMA.

SUBACUTE, VESICO-PUSTULAR, CRUSTED VARIETY, OF THE LIPS.

The disease occurs in a lad, and is confined chiefly to the lips and chin. Elsewhere upon the face there are a few similar, though less marked, lesions. There exist much œdema and crusting, causing immobility of the lips. Duration one month. (Dr. GEORGE HENRY FOX's case.)

years, these transient, wandering, marginate, yellowish and reddish or whitish, benign patches of the tongue were at one time present for a period of several years, the subject being at that time a lad of fifteen, but I was unable to construe the manifestations as being eczematous. They lacked the features of eczema, did not sympathize with the course of the eczema upon the general surface, and were peculiar in other ways. That they were due to the same causes that gave rise to the eczema I think is highly probable. Unna¹ has met with allied "circular exfoliative patches" upon the palms, which differed from eczema, psoriasis, syphilitic lesions, and other well-known diseases. Eczema of the tongue is also to be distinguished from the disease known as "leucoplakia lingualis et buccalis." In these affections the symptoms of eczema are wanting; in brief, they do not possess eczematous features.

CHEILITIS GLANDULARIS APOSTHEMATOSA.

In connection with eczema of the lips, a rare chronic inflammation of the lips, allied to eczema, may be referred to. It was first described by Volkmann² as CHEILITIS GLANDULARIS APOSTHEMATOSA³ (or MYX-ADENITIS LABIALIS), and more recently by Purdon,⁴ who reports four cases observed by him during the last twenty years. The disease is usually confined to the lower lip, which is swollen and firm, the mucous glands being obviously congested and exuding a muco-purulent secretion through the dilated ducts. In consequence the lips become glued and crusted through the night. There is more or less heat, but little or no pain, and the process is prone to exacerbations, and to be chronic, sometimes lasting years. I have seen several marked cases, all of which were rebellious to treatment and had been confounded with eczema. Two of the cases, both in ladies, ultimately recovered. Such local remedies as boric acid, mild lotions containing sulphur, astringents, diluted black-wash, nitrate of silver, and alkalies, together with hygiene and general and nervine tonics, are indicated. In one of the cases referred to, a very weak compound zinc sulphide lotion was of much value; in another, boric acid. The disease is most frequently met with in women, especially in middle life, and is, in my experience, usually associated with an impaired, depressed state of the nervous system. In some cases the glandular involvement is not obvious, the apertures of the ducts being partially occluded rather than patulous, when the diagnosis may be difficult. The disease will be referred to again in considering seborrhœa, to which, in the author's opinion, it is more closely related than to eczema.

¹ Viertelj. für Derm. und Syph., 1881.

² Archiv für Path. Anat. und Phys., Bd. 1. (1870) p. 142. Volkmann in his short but valuable contribution reported five cases, all occurring in women and upon the lower lip.

³ Derived from *aposthema*, an abscess.

⁴ Brit. Jour. of Derm., Jan. 1893.

ECZEMA PALPEBRARUM.—This occurs most frequently in children, and especially in those of a weakly or of a scrofulous disposition, showing itself along the edges of the eyelids. But it also develops itself in adults, usually as a chronic condition, and in connection with signs of the disease elsewhere. The hair-follicles are involved usually with small pustules, which ooze and are succeeded by crusts. The lids are generally swollen, red, and more or less itchy, and, unless frequently cleansed, tend to become glued together. In other cases they are the seat of a fine, scaly, pityriasic desquamation. Conjunctivitis is frequently present. Many cases of so-called blepharitis and blepharo-conjunctivitis are eczematous. The local treatment must vary according to the intensity and the chronicity of the disease. Asepsis should be practised upon the eczematous conjunctivitis as well as upon the lids, a solution of corrosive sublimate 1 to 10,000 being valuable. This strength may later be increased to 1 to 2000. The surrounding contiguous skin should be similarly treated. Boric acid may also be employed. Antiseptic poultices of rice flour may be used at night; in other cases dusting powders of boric acid, zinc oxide, or bismuth are preferable. A weak solution of silver nitrate, one-half to one per cent., is useful in some cases. In rebellious cases the eyelashes may be extracted and the edges touched with a solution of potassa in water, ten grains to the ounce, as recommended by McCall Anderson. The lid should be everted, and the edges carefully and thoroughly dried out, a very small quantity on a fine brush being applied. The effect of the alkali should be immediately neutralized with diluted acetic acid. The operation may be repeated every few days, after which a weak ointment of the nitrate of mercury may be used. In some cases this ointment, weakened, may often be employed alone with good result. Jamieson¹ speaks highly of the following formula as a base for a non-irritating ophthalmic ointment: Lanolin, ʒiii ; oil of sweet almond, and water, of each, ʒss . I have found it an acceptable soft ointment. Proper internal treatment, together with hygienic measures, is called for in almost all cases. In rare instances pediculi pubis are encountered on the border of the eyelids about the roots of the eyelashes, and may be difficult to detect without a magnifying glass.

ECZEMA BARBÆ.—When the disease attacks the region of the beard it gives rise to disfigurement and more or less heat and itching, and is generally stubborn in its course. It manifests itself as an eczematous folliculitis (**ECZEMA FOLLICULARE**): according to my experience, however, eczema does not tend specially to invade the follicles. Some of the cases reported as eczema of the follicles should, I think, be designated rather as folliculitis. The latter is characterized by the formation of small pustules which are seated around the hairs. The characteristic

¹ Brit. Jour. of Derm., 1896.



ECZEMA.

CHRONIC, VESICO-PUSTULAR VARIETY, OF THE BEARDED REGION.

The case shows eczema invading the bearded region of the face in a man aged thirty. There also exists a patch of crusted eczema rubrum on the back of the hand. The disease upon the face is of interest because of its general resemblance to sycosis. (Dr. GEORGE HENRY FOX'S case.)

features of eczema, however, are generally lacking. Where the eczema runs an acute course and develops extensively, crusts of a yellowish or greenish-yellow color soon form, which mat the hairs and adhere to the skin. At times a small patch only, in other cases the greater part of the beard, may be involved. The upper lip is also liable to the disease, existing especially in connection with coryza and rhinitis. In my opinion, however, most of such cases illustrate sycosis rather than eczema. The disease may run an acute course, but more frequently it soon becomes chronic. It may be confined to the hairy portions, or may, and often does, extend to other regions of the face. In the latter respect it differs from common sycosis, which is always limited to the hair-follicles. As regards the general features, these two affections are similar, but the difference is in most cases sufficiently clear when the various points of distinction are carefully viewed. Sycosis is a peculiar inflammation of the hair-follicles—a folliculitis barbæ—characterized by the formation of papules, tubercles, and pustules; the process is a deep one, and concerns the follicles. In eczema the process is more superficial, and extends over the surface, involving the follicles in its course as in eczema of the scalp. Papules and even tubercles are not uncommon in sycosis, but are wanting in eczema of the beard. The general history of the case will, moreover, aid in distinguishing the diseases.

Tinea sycosis may also resemble eczema barbæ, but, remembering the symptoms which usually occur in the former affection, a mistake can scarcely be made. Crusts are generally abundant in eczema; in tinea sycosis, except in extreme cases, they are scanty, and are not eczematous in character. Upon their removal, the surface of the skin in eczema is even or smooth, whereas in tinea sycosis it is often uneven, papular or infiltrated, and lumpy. This point is of much value in diagnosis. The hairs of eczema cannot be extracted without pain, for they are firmly seated in their follicles. In tinea sycosis, where the disease has existed for some time, they are usually loose. The extracted hairs, examined with the naked eye or the microscope, are found to be different in the two diseases: in eczema they are straight and healthy in appearance, often with a luxuriant-looking, glutinous mass—the root-sheath—attached to the root, while in tinea sycosis they are crooked or twisted, and in chronic cases usually dry. In eczema there exists no fungus; it is always present in tinea sycosis, and may readily be detected with the microscope. Eczema, unless complicated, is not contagious; tinea sycosis is highly so, and its source may, moreover, often be traced to tinea circinata, either on other parts of the body or upon other members of the family.

TREATMENT.

The treatment varies with the variety of the disease, the degree of inflammation, whether acute, subacute, or chronic, and the area invaded. In the ordinary form, occurring in patches, subacute, and tending to

be better and worse from time to time, it may be handled in the same manner as upon non-hairy regions. Pastes and ointments containing resorein, salicylic acid, thiol, ichthyol, and sulphur, all in small quantity, may often be prescribed with benefit. In rebellious cases, however, more heroic remedies are sometimes demanded, according to the following plan. After the crusts have been taken off by means of a poultice or soap and warm water, the face is to be shaved. The first operation is apt to be painful, but after this patients, as a rule, do not complain. The beard is to be kept clean, shaving being resorted to every other day, in order that the remedies may be brought into immediate contact with the skin. If the process is subacute or chronic, the method of treatment by means of a stiff diaehylon ointment and soft soap may be directed, the disease being managed in the same manner as upon the non-hairy parts. Instead of, and better than, an ointment, a plaster of soap and diaehylon plasters, equal parts, with ten or fifteen per cent. vaseline, may be prescribed. The applications should be employed continuously day and night when this is possible. The skin should never be rubbed with the soap unless an ointment or a plaster is to be afterwards bound on. In the chronic stage, sometimes mildly stimulating ointments, such as a sulphur ointment, ten or fifteen grains to the ounce, or a white precipitate ointment, from ten to twenty grains to the ounce, may be used with more benefit than the stronger ointments. One grain of mercuric sulphide may be added with advantage to the ounce of a weak sulphur ointment in many cases. A weak resorein and cold cream ointment, ten or fifteen grains to the ounce, may also be recommended. The prognosis is favorable, but the cure, even under favorable circumstances, is sometimes slow, though less so than in syphilis vulgaris.

ECZEMA AURIUM.—The ears are a not infrequent seat of eczema in both children and adults, and may be involved in connection with the disease upon contiguous regions, especially the scalp, or be alone attacked. The erythematous, vesicular, and pustular varieties all occur here. It appears as an acute disease, resembling erysipelas, and also as a subacute or chronic disease, the latter being of the most frequent occurrence. In acute vesicular and pustular eczema the auricles become red and swollen, sometimes markedly so, the oedema and infiltration causing them to stand out from the head. They are the seat of burning and itching, and of pain. Fissures are also at times present, especially in the retro-auricular sulcus. An eczema intertrigo is not uncommon here. One or both ears may be attacked, more commonly both. The disease often extends into the meatus with swelling, causing partial occlusion (**ECZEMA MEATUS**). In some cases crusting is abundant, and in others there is much thickening of the walls of the canal, together with desquamation in the form of adherent flakes or scales. When the disease is slight the diagnosis of erythematous eczema of the external auditory canal may go unrecognized.

On account of the peculiar anatomical structure of the auricles, the application of remedies is difficult. Crusts are not to be removed roughly. Boric acid and glycerin lotions, cold starch poultices made with boric acid solution, lime liniment, and other similar preparations are to be employed in the acute stage. Dusting powders are also indicated in the beginning where the discharge is profuse. Bandages are often made use of with advantage. Ointments will be found serviceable, petrolatum being preferable to lard as a base. *Aspergillus* flourishes on lard, but does not thrive on petrolatum. The preparations of tar are of particular value, after the acute stage has passed away. They are especially serviceable in the squamous variety. In obstinate squamous eczema of the external canal, strong silver nitrate solutions may prove beneficial. Calomel is also useful, in the strength of half a drachm or one drachm to the ounce of ointment, or in the form of a dusting powder. Black wash is also of value, followed by a stiff ointment of zinc oxide, bound on with a bandage. The use of potassa solutions on the walls of the external auditory canal (gr. ii–iv ad fʒi) once or twice a week, followed later by stimulating ointments, as suggested in the treatment of eczema of the eyelids, but stronger, will sometimes be found of service. A five or ten per cent. solution of silver nitrate may be employed in rebellious cases of discharging eczema of the auricles, and the external auditory canal may be advantageously touched with the same solution. The disease is usually obstinate, and is liable to recur.

ECZEMA ARTICULORUM.—Eczema generally selects the flexor surfaces for its seat,—the axillæ, the flexor surfaces of the elbow-joints, the popliteal spaces, and the groins, all being favorite regions. The disease tends to pass into the moist state, with more or less maceration of the epidermis, which is kept up by the motion of the parts or by the rubbing of opposite surfaces. Upon the hands the knuckles are often attacked, fissures following the natural furrows of the skin being common. The disease is generally symmetrical. In certain localities it passes into the condition known as eczema intertrigo.

ECZEMA GENITALIUM.—The genital organs are frequently attacked, occasioning distressing symptoms. In the male the penis and scrotum may be involved together, or either alone may be the seat of disease, but the scrotum is the region commonly affected. Owing to the rich supply of lymphatics, it is apt to be considerably œdematous and infiltrated. Moisture, crusts, and fissures are also prone to occur, followed in cases of long standing by extensive thickening. The itching is usually severe. It is an extremely harassing form of the disease, and when fully developed is generally obstinate. The female organs show like symptoms. The labia are usually affected, and the mucous membrane and even the vagina may also be invaded. The parts are generally more or less swollen, red, and hot, and ordinarily discharge from their excoriated surfaces; crusts may form, and the opposing surfaces are apt

to become more or less glued. At other times, however, no discharge takes place, the skin being merely erythematous, dry, and slightly scaly. The itching is usually violent, and at times occasions intolerable misery. Scabies, pediculi pubis, tinca circinata, and so-called "eczema marginatum" should always be excluded in the diagnosis. Eczema of the genital organs may be due to some disturbance of nerve equilibrium or irritation in the genital tract. It may be reflex. The cause is in most cases difficult of explanation; in females it may sometimes be referred to uterine disorders. It is to be distinguished from pruritus vulvæ, with which it is often confounded. In either sex glycosuria, when it exists, is apt to produce eczema of the genitals.

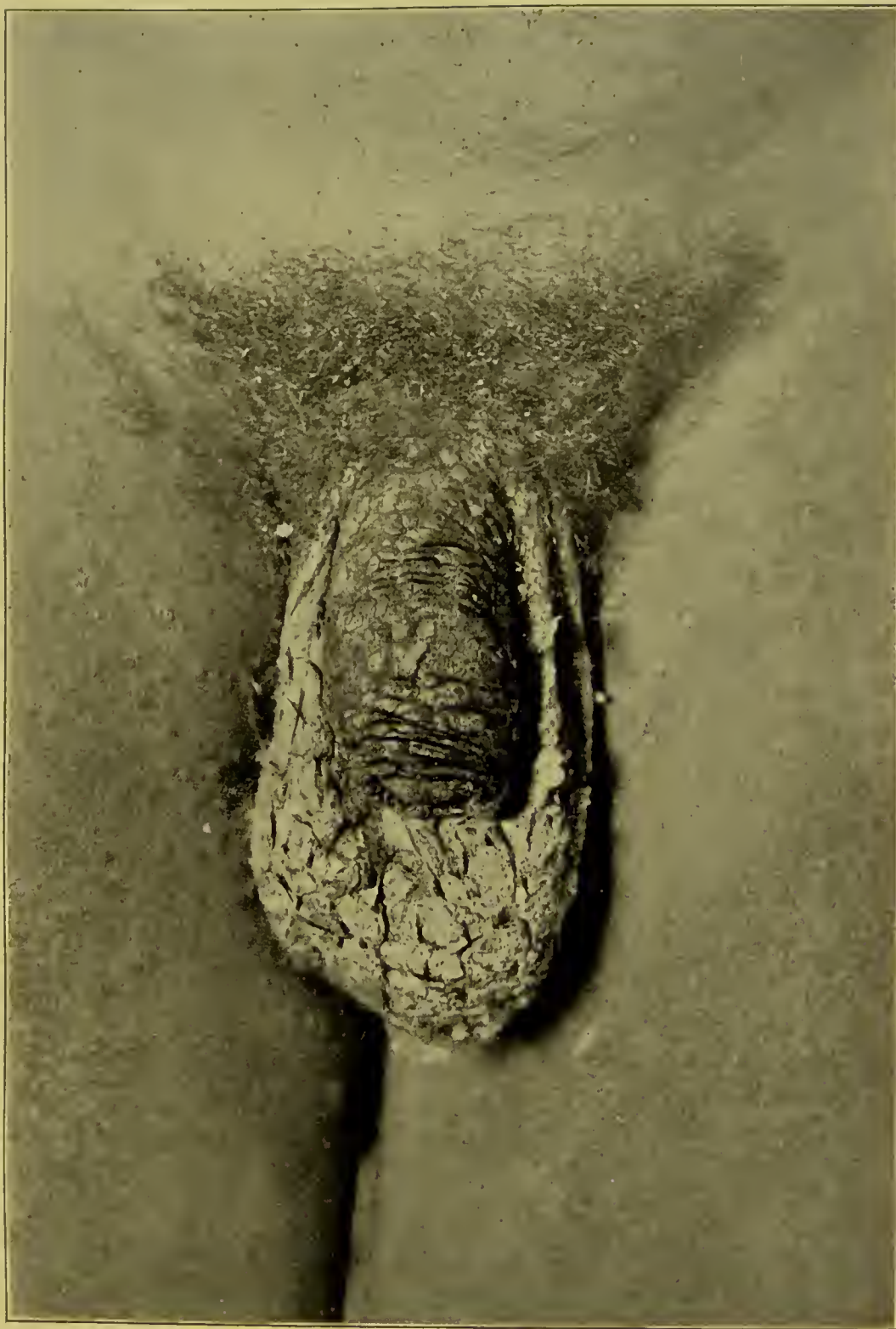
TREATMENT.

At times it yields easily to treatment, but in other instances is in the highest degree intractable. It is usually met with as a subacute or a chronic disease, its advent being in the majority of instances insidious. In the acute stage a zinc-resorcin or salicylic paste, or black wash, followed by zinc oxide ointment, may be prescribed. In eczema of the vulva Piffard holds in esteem solution of dioxide of hydrogen. In irritable cases, where stimulating remedies are not tolerated, soothing lotions, liniments, and ointments containing coeaine are of value. I have employed with good result the following powder-lotion:

R Calaminæ Præparatæ,
Bismuth. Carb., aa ʒss;
Amyli, ʒss;
Glycerini, fʒss;
Aquæ Lauro-Cerasi, fʒiv.
M.

To this may be added five or ten minims of compound tincture of mineral tar or of carbolic acid to the ounce. In obstinate cases of scrotal eczema "Vlemingckx's solution" (of sulphuretted lime), one part to ten parts of water, may be tried. Stimulating ointments, as the stronger mercurials and tarry remedies, and their various combinations, as well as the other remedies elsewhere referred to, may likewise be tried, for it frequently happens that one preparation will answer when another of a similar kind fails.

Calomel ointment, a drachm to the ounce, may also be mentioned, to which sometimes a little tar ointment may be advantageously added. In some cases of chronic erythematous eczema of the scrotum occurring in neurotic subjects I have found equal parts of calomel and starch, used in the form of a powder, to give relief when other remedies have failed. A powder composed of camphor forty grains to the ounce of starch and zinc oxide is also sometimes serviceable. Upon the scrotum the method of treatment by means of *sapo mollis* and *unguentum diachyli* will sometimes be found to relieve the symptoms when other means have



ECZEMA.

CHRONIC, SQUAMOUS VARIETY, OF THE SCROTUM AND PENIS.

The subject is a young man, and the disease of one year's duration. There is a history of moisture or discharge and exacerbations, with crusting in the beginning. Of late the disease has been squamous, in the form of adherent plate-like scales. (Dr. HENRY G. PIFFARD's case.)



ECZEMA.

ERYTHEMATO-PAPULAR VARIETY, OF THE VULVA AND THIGHS.

The subject is a middle-aged woman. The lesions resembled syphilitic mucous macules and papules, and this is the interesting feature of the case. In certain parts there was considerable thickening of the skin. Duration three years. (Dr. ROBERT W. TAYLOR'S case.)

been unsuccessful. Potassa solutions, ten to thirty grains to the ounce, may be applied in place of the soap. Caustics of this kind are never to be used strong without counteracting their effects by means of water or dilute acids; ointments, moreover, should always immediately succeed their use. Painting the part with tincture of iodine or strong solution of carbolic acid sometimes proves useful. In severe, chronic cases of eczema of the scrotum scarification is sometimes followed by relief and improvement; and in similar cases the use of the constant current may occasionally prove of service.

ECZEMA ANI.—The anus is frequently alone attacked. Not infrequently, however, eczema is at the same time present upon the neighboring regions. The disease generally makes its advent insidiously and gradually, very seldom showing itself in an acute form. The part becomes redder than normal, infiltrated, and thickened, either with or without moist exudation. Fissures are generally present, more or less pain and distress consequently attending movements of the bowels. Anal fissure, often painless, which may extend into the bowel, is also a not infrequent accompaniment. The itching and burning are of a persistent and annoying character, and are generally worse at night. The disease is sometimes increased by the friction of the opposing nates, and by the heat, perspiration, and sebaceous secretion. Care should always be exercised in diagnosing between pruritus and eczema. Many cases of so-called pruritus ani are really eczema. In the former, it will be remembered, there exists no visible disease, except that produced by rubbing and scratching, while in eczema one or more characteristic symptoms will be present. Syphilis, especially in the form of erythematous infiltrations, flat papules, mucous patches, and fissures, is to be excluded.

The general management of the case is most important, including diet and hygiene. Stronger local remedies than are usually employed in genital eczema are ordinarily called for. In this form of eczema in particular the value of hot water applications, as hot as can be borne, should not be forgotten. A few formulæ generally useful may be referred to. Carbolic acid and tar are both valuable in this form of the disease, but these two drugs, especially tar, should not be prescribed too strong, at least at first, the best results in many cases following weak preparations. In some cases mild remedies, in others strong, are most effective. Calomel ointment, a half-drachm or a drachm to the ounce, also equal parts of tar and calomel ointments, are especially useful. An ointment of oleate of cocaine, made with lanolin and olive oil or lanolin and petrolatum, one or two per cent. strength, is sometimes of service in subduing irritation. But cocaine should be used sparingly and with caution about mucous membranes, on account of absorption. The following combination, somewhat stimulating, but often soothing in effect, has proved of more than ordinary value in some cases under my observation:

R Sulphuris Precip., ℥ii ;
 Naphtol., gr. xx ;
 Morphiae Acet., gr. ii ;
 Zinci Carb., ℥i ;
 Ungt. Aquæ Rosæ, ℥i.

M.

In obstinate cases strong applications are sometimes more useful than the ordinary lotions and ointments, the part being painted lightly with carbolic acid, one or two drachms to the ounce of glycerin or alcohol ; a strong solution of nitrate of silver ; liquor potassæ ; or tincture of iodine. Searification may be resorted to in chronic cases where the infiltration is notably thick and hard.

Anal fissures when present should be treated by dilatation and due attention given to the rectum as well as to the sphincter. At the outset of the treatment it should always be determined how far up the mucous membrane the disease extends.

ECZEMA INTERTRIGO.—This variety occurs upon the inner surfaces of the nates, in the groins, beneath the mammæ, and in other localities where folds of skin naturally come in contact with one another. A dry or moist or a more or less excoriated surface, usually the latter, is the result, which is greatly increased by movement, walking, and inattention to cleanliness. The surface is generally the seat of a mucoid secretion or is in a state of excoriation and the seat of burning or soreness. The affection is oftenest met with during hot weather. This form of eczema is not to be confounded with erythema intertrigo, or chafing, a hyperæmic affection which is common in summer among people of all ages and classes. An erythema intertrigo, however, may in some cases readily pass into an eczema intertrigo.

The parts should not be washed with water, although certain lotions, as a solution of boric acid, may be employed for keeping the skin clean. A soothing lotion in the erythematous variety, especially in eczema intertrigo in infants and children, consists of freshly prepared lactate of lead, made by adding one drachm of lead water to one ounce of milk. A lotion composed of fifteen grains each of prepared calamine and zinc oxide to one ounce of water will be found acceptable. To this in subacute cases ten grains of ichthyol or resorcin may sometimes be added with advantage. Oxide of zinc, oleate of zinc, and starch dusting powders, and astringent lotions, as of acetate of lead, acetate and sulphate of zinc, may be used to advantage, the opposing surfaces being kept separated. Acetate of lead, in the form of the following formula, sometimes proves useful :

R Plumbi Acetatis, gr. iv ;
 Acidi Acetici Dil., ℥x ;
 Glycerini, fʒss ;
 Aquæ, fʒi.

M.

An ointment or paste containing from two to five per cent. of ichthyol is

sometimes serviceable; likewise an ointment of borax and petrolatum, twenty or thirty grains to the ounce. In acute and subacute eczema, with or without moisture, the salicylic-zinc-starch paste will often give good results. A boric acid ointment or paste, half a drachm or a drachm to the ounce of vaseline, and salicylic acid in the form of an ointment or paste, ten grains (dissolved in alcohol) to the ounce, are both useful; likewise salicylated starch, used as a dusting powder.¹ A resorcin paste, in the strength of ten or fifteen grains to the ounce, may also be mentioned. Sometimes a weak solution of nitrate of silver, five grains to the ounce, will prove more useful and rapid in effecting a cure than the remedies mentioned. Complete rest will go far towards modifying the symptoms and relieving the affection.

ECZEMA MAMMARUM.—The breasts in the female are at times the site of eczema, which generally localizes itself in a more or less circumscribed form about the nipples, one or both of which may be invaded. It is met with for the most part in those who are nursing, but it may also appear in single women. Ordinarily it assumes a moist form, soon becoming eczema madidans, attended with crusts and fissures. In nursing pain may be experienced to such a degree that the mother will be compelled to withdraw the infant. The disease is always aggravated by suckling. The nipples in severe cases become crusted, retracted, and sink in the breast. The diagnosis is not difficult, but Paget's disease, to be referred to presently, and scabies especially should be excluded.

Boric and salicylic acid pastes will be found useful, but, as a rule, strong remedies are more serviceable. The disease is apt to prove refractory. A calomel ointment, one drachm to the ounce, to which may be added thirty grains of carbonate of magnesia, is sometimes useful. In obstinate cases the *sapo mollis* and *unguentum diachyli* method of treatment will be found effective. The nipple will in most cases tolerate the soap and friction, and after being dressed will feel relieved. Solution of nitrate of silver, five per cent. strength, may be recommended as one of the most useful remedies. Strong potash solutions, and corrosive sublimate in collodion, are equally useful. Acetic acid may also be applied with benefit.

FISSURED NIPPLES sometimes become eczematous. With or without this complication they may be successfully treated by various remedies, but, as is well known, at times the lesions are rebellious. In addition to the milder ointments and lotions which are often beneficial or curative, mention may be made of some stronger applications, such as a five per cent. solution of carbolic acid, to be washed off before nursing. A one per cent. solution of silver nitrate in spirit of nitrous ether is another good milder remedy. Touching with compound tincture

¹ Kersch recommends that the starch be gradually mixed with a two or three per cent. alcoholic solution of the acid. Dublin Jour. Med. Sci., Nov. 1881.

of benzoin is to be recommended, the application forming a varnish over the surface, and not interfering with nursing. An ointment composed of extract of rhatany, 1 part; oil of sweet almond, 2 parts; cacao butter, 10 parts, is much esteemed in France for simple fissured nipple. Balsam of Peru ointment, forty grains to the ounce, and liquor gutta-perchæ, are also of value.

PAGET'S DISEASE.

A rare and obstinate affection of the skin of the areola and nipple, with tolerably well defined clinical features, which is liable to be regarded during its early stage as "chronic eczema of the nipple," is sometimes followed by cancer of the breast, as was originally shown by Paget.¹ Thin² proposed that the disease, which is peculiar, should be termed "malignant papillary dermatitis," it being characterized by more or less destruction of connective tissue. It is now generally known as Paget's disease, and may invade other regions than the nipple. It generally begins as an eczematoid disease, sooner or later involving the epithelium of the lactiferous ducts in case of the nipple being its seat. In distinguishing it clinically from common eczema, the chief points to be borne in mind are the well-defined margin, and the evidence of marked infiltration in the papillary layer when the affected part is taken between the fingers. Later, there may exist distinct signs of cancer, both of the nipple and of the breast itself. I shall describe it more fully in connection with epithelioma, to which when fully developed it is more closely allied than to eczema.

ECZEMA UMBILICI.—This is met with alone or in connection with the disease upon other parts of the body. The navel, which sometimes is tumid and pouts, may be the only portion involved, or the surrounding skin in the shape of a circumscribed circular patch may also be affected. It is usually moist, crusted, and fissured. The diagnosis is occasionally rendered difficult by the fact that syphilis attacking this locality may simulate eczema. Ulceration, however, will generally be encountered in syphilis, and the odor, moreover, will be particularly offensive. The treatment will depend upon the variety of the disease, especially if fissures exist, and upon the extent of skin involved. Strong applications are generally called for. The most useful remedies are those which are of value in eczema of the ears.

ECZEMA CRURUM.—The legs in elderly persons of both sexes are very frequently attacked. Eczema here (called also **ECZEMA CRURALE**) gives rise to a chronic condition which may last for years. It appears usually in the erythematous variety, which in most cases soon loses its distinctive features and passes into dry or moist eczema rubrum. One or both legs may be affected, generally only one. Other regions are

¹ St. Bartholomew's Hospital Reports, 1874.

² Brit. Med. Jour., vol. i.; 1881, pp. 760, 798. See also Munro's article, Glasgow Med. Jour., Nov. 1881.



ECZEMA.

CHRONIC, PAPULAR VARIETY.

The disease consists of chronic, pinhead-sized, excoriated, discrete and confluent papules, occupying the popliteal space, occurring in a middle-aged seamstress. The skin is red, scaly in places, considerably thickened, thrown into ridges, and the seat of constant itching. Duration six months. (The Author's case.)



ECZEMA.

CHRONIC, EXCORIATED AND FISSURED, ERYTHEMATOUS VARIETY.

The disease, occurring in an old woman, is confined to the leg and the back of the foot. Considerable thickening and condensation of the skin exist. It is a common variety, met with especially in the elderly of the poorer classes, and generally pursues a chronic course. (The AUTHOR's case.)

not, as a rule, assailed at the same time ; patients may have eczema of one or both legs for a long period without showing any trace of the disease elsewhere. It is rare in children and young persons, but among middle-aged and elderly people, especially in dispensary practice, its occurrence is very common. It shows itself as one or more patches, especially over the shin, but also upon the calf and about the ankle. If several exist they tend to coalesce and to form one continuous patch, involving often the greater portion of the leg. When the disease is chronic,—the state in which it often first comes under notice,—the leg presents the following appearances. It may be bright or deep red in color, chronically inflamed, more or less œdematous, covered in part or wholly with yellowish or brownish crusts, and discharging here and there the peculiar eczematous fluid, sometimes with pus or blood. In places the cutis is almost bare, the result of scratching, showing an inflammatory, punctate, oozing surface. On the other hand, the leg may be reddish, mottled, brownish, pigmented, without moisture or crusts, exhibiting a smooth, shining or scaly, unbroken skin, in the form of patches, or, more commonly, one large patch. In middle-aged and elderly subjects pigmentation is a common symptom in chronic eczema of the leg. Both forms of the disease are, however, attended with infiltration, thickening, inflammatory symptoms, and itching. Venous stasis also plays an important part in chronic eczemas of the lower extremities, especially in elderly, debilitated, over-strained, working people, and must be regarded as one of the chief causes of complications. Eczema of the leg is frequently associated with varicose veins, this being sometimes a starting-point of the disease. Ulcers, resulting from the breaking down of the veins or of circumscribed areas of infiltrated, weakened skin, are often present, and complicate the condition. The diagnosis is rarely difficult, although varied forms of dermatitis, some of them resembling eczema, are prone to occur on the leg. Other complications with eczema, too, are common, in which case the predominant process determines the diagnosis. The hypertrophic state of the tissues known as elephantiasis is at times accompanied by eczema, but the eczema here will be recognized as being secondary to the original affection. If simple or varicose ulcers are present, they are to be distinguished from syphilitic ulcers, which often show themselves in this region. The diagnosis in this case is frequently difficult, and an opinion should be guardedly expressed where any doubt exists.

TREATMENT.

The treatment will depend upon the variety, stage, and extent of the disease, and also upon other circumstances. The various remedies and methods referred to in considering the general treatment of eczema may be prescribed as may appear most suitable to the case. Where there are acute œdema and discharge, lead washes, black wash, and the like are

indicated. In acute eczema, especially where there are œdema and swelling and much weeping, Kaposi¹ speaks well of “liquor aluminii acetici,” sufficiently diluted, applied with compresses; or better than the above is “Burow’s solution,” 2 to 10 parts to 100 parts of water, the application to be renewed every two or three hours. Both are also of much value in local, relapsing, rebellious acute outbreaks, especially where the weeping is profuse. Burow’s solution consists of lead acetate, grains 600; alum, grains 300; sodium sulphate, grains 60; water, fluidounces 10. Dissolve the lead acetate in 3 fluidounces of water, and the sodium sulphate and alum in the remaining water; mix the solutions and stir; allow it to stand for two days, and filter without washing the residue. The formula for solution of aluminium acetate is as follows:²

R Aluminium Sulphate, Crystallized, 30 parts;
 Acetic Acid (U.S.P.), 30 parts;
 Calcium Carbonate, 13 parts;
 Water, 100 parts.
 M.—Sig. Use diluted, one part to twenty or forty.

Ointments, salve-muslins, plaster-muslins, and pastes are also useful. Thus, a paste made of calomel, a scruple, oxide of zinc, four drachms, and vaseline, four drachms, will be found serviceable in many cases, especially where the disease exists in discrete moist or dry patches. In painful eczema of the leg, with œdema and varicose veins and small ulcers, a condition frequently met with in hospital practice, especially in women, a lotion of lead water and black wash, equal parts, with a half-drachm of oxide of zinc to the ounce, will often afford speedy relief. Europhen is useful in varicose ulcers with eczema, applied in powder, either alone or mixed with boric acid. It is an excellent substitute for iodoform, has no unpleasant odor, and does not irritate inflamed skin. An ointment of oxide of zinc, talc, and tar, each twenty-five grains, and petrolatum one ounce, is sometimes beneficial in the same class of cases. It is important where there are varicose veins, or where there is tendency to œdema and stasis, that the limb be properly supported. Bandages should be used also for the purpose of retaining the dressings in close contact with the skin. Support of this kind will not only prove of comfort to the patient, but will materially hasten the cure. Large ulcers, when present, must receive proper attention. A useful stimulating ointment consists of two grains of red sulphide of mercury to the ounce; and fumigation with calomel may be practised sometimes with great benefit. If the ulcer is painful, a lotion of chloral, ʒss–ʒi to the pint of water, will sometimes afford relief. The great importance of rest, not only in cases in which ulceration exists, but in all cases of eczema of the leg, should never be lost sight of.

¹ Op. cit.

² This solution contains 7.5 to 8 per cent. of basic acetate of aluminium. It is practically identical with the “liquor aluminii acetici” of the German Pharmacopœia.



ECZEMA.

CHRONIC, LARGE, LENTICULAR, PAPULAR VARIETY.

The legs are the seat of large, flat papules and flat areas of inflammatory infiltration, most of which are much excoriated and the seat of blood-crusts. The skin generally of the legs is considerably thickened, the result of itching and long-continued scratching. The subject is an elderly woman, and the disease is of three months' duration. (The AUTHOR's case, University Hospital.)



ECZEMA.

CHRONIC, VESICO-PUSTULAR, CRUSTED VARIETY, OF THE LEG.

The disease is confined to the leg of an old woman. The lesion is peculiar in being horseshoe-shaped, and resembles a pustulo-crustaceous syphiloderm. There were other manifestations of eczema elsewhere. Duration one year. There was no ulceration beneath the crust, and recovery was rapid under local treatment. A rare form of configuration in eczema. (The AUTHOR's case.)

The solid or perforated india-rubber bandage, brought to the notice of the profession by Martin,¹ and later by Bulkley,² is of value in the treatment of chronic eczema of the legs, especially when complicated with ulcers. The rubber bandage acts as a stimulant, as a protector from the air and other external influences, and as a supporter to the limb. It should be made of the best rubber, thin and elastic, and be applied, as a rule, directly to the skin, the limb being first cleansed. It is worn only during the day, and on removal at night should be washed and dried. The limb should be treated at night with such applications as may be indicated, as, for example, a soothing paste. In long-standing chronic eczema accompanied with thickening, œdema, or varicose veins, this bandage sometimes will prove a valuable aid in the treatment. There are some cases, however, in which it does not answer, over-stimulating the skin and causing increased inflammation and the production of small pustules. A few days will usually determine its efficacy or the reverse. Sometimes the disease, especially the moist form, is much benefited by painting with solution of silver nitrate, in the strength of from two to four per cent. In chronic, rebellious cases of moist eczema with thickening and hardening, a good plan of treatment is that consisting of *sapo mollis* and *unguentum diachyli*, or a soft diachylon-soap plaster. In these cases excellent results usually follow this treatment, provided it is properly carried out. Where the disease is not in this severely chronic state, other methods, involving less time and trouble, are generally preferable. Such cases may also be treated easily and successfully, after disinfection with boric and salicylic acids or a weak corrosive sublimate wash, with the author's, Pick's, or Klotz's³ salicylic plasters. These plasters are also very useful for leg ulcers.

The mode of treatment by means of the glycerin-gelatin preparations is of great value in many cases of eczema of the leg, especially among the poor and hard-working classes. The several formulas vary, according to the amount of gelatin and glycerin they contain, the more flexible having a larger proportion of glycerin. Zinc oxide especially, as well as various other drugs, may be incorporated with them. A desirable formula for dispensary and hospital use for the leg consists of—

Gelatin,
Zinc Oxide, of each, 10 parts;
Glycerin,
Water, of each, 40 parts.

This formula gives a zinc-glycerin-gelatin product, which in the ordinary temperature of a room is firm, but speedily becomes fluid on being heated

¹ Trans. Amer. Med. Assoc., vol. xxviii. p. 589; Chicago Med. Jour., Oct. 1877; Brit. Med. Jour., Oct. 26, 1878.

² Arch. of Dermat., July, 1878.

³ On the Advantages of a Compound Salicylated Plaster in Dermatological and Surgical Practice. New York Med. Jour., Sept. 17, 1887.

in a pot on a hot-water bath. It is applied with a stiff bristle-brush, one layer over another, and in some cases, where a firm dressing is deemed best, a layer or two of gauze or muslin is smoothly applied and glued down with another coating of glycerin-gelatin.

Before the first application, and with each change of the dressing, the leg should be bathed and thoroughly cleaned with hot water and soft soap, and afterwards scrubbed and disinfected with a one-half to one per cent. corrosive sublimate lotion. The slight bleeding which follows is beneficial rather than injurious to the eczema. In the case of an ulcer existing, the treatment must be less vigorous, in order that bleeding be not provoked. If an ulcer is present, the surrounding eczematous skin should be smeared with a simple zinc-starch-petrolatum paste. If there is much eczematous discharge, a boric acid paste may be substituted. The ulcer is to be dusted lightly with iodoform, dermatol, or other similar drug; and if it is secreting freely, a sterile gauze dressing should cover it. Small ulcers need not be taken into special consideration, and are to be treated the same as the eczema. A muslin or gauze bandage may be finally put on the limb for protection. In a quarter of an hour after the last coating the patient may go out, and in twenty-four hours the bandage is entirely firm and dry.

The formula given may be modified by the addition of more or less glycerin and zinc, according as flexibility or stiffness is required. Other formulæ have been already mentioned. The dressing may be used upon patches of acute vesicular eczema, and upon the face and upper extremities as well as upon the legs. It can be washed off with hot water whenever desired. Various drugs, especially ichthyol (two per cent.), may be incorporated in the jelly¹ when they are needed.

Its advantages may be briefly stated. It causes no irritation, and in most cases healing of the ulcer and cure of the eczema begin at once. It serves as a protection against scratching, and against infection from outside. The dressing is also equally useful on ulcers without eczema, and especially when used to protect skin transplantation. One great advantage of this method of treatment is that but little time and attention are required on the part of either physician or patient. If the secretion from the skin or from the ulcer is copious, the dressing should be changed about twice a week; in other cases not so often, the frequency depending on the amount of secretion and the healing process.

ECZEMA MANUUM ET DIGITORUM.—Owing to the peculiar anatomical formation of the skin about the hands, as well as to the exposure to which they are subjected, they are frequently the seat of eczema. One or both hands may suffer, generally both. The feet are not usually attacked at the same time. All varieties of eczema are encountered upon the

¹ A list of various drugs, and the proportions of glycerin, gelatin, and water to be used with each, is given by Unna and Beiersdorf in tabular form in *Monatsh. für prak. Derm.*, Bd. ii., 1883, pp. 40-42.



ECZEMA.

FISSUM, OR FISSURED VARIETY, OF THE PALMAR SURFACE OF THE HAND AND FINGERS.

The subject is a middle-aged woman, who has been affected with this variety of the disease upon both hands for many years, especially in winter. Itching, burning, and pain are all complained of. At times the fissures bleed and, in certain localities, become crusted. A common form of eczema of the palms of the hands and the flexor surfaces of the fingers. (The AUTHOR's case.)



ECZEMA.

CHRONIC, SUPERFICIAL, SQUAMOUS VARIETY, OF THE ENTIRE PALMAR SURFACE OF
HAND AND FINGERS, WITHOUT FISSURING.

The skin is not much infiltrated, but the epidermis is uniformly dry, harsh, wrinkled, and slightly scaly. Both hands are similarly affected. The inflammatory symptoms are mild, and at times are, it is stated, almost absent. (Dr. HENRY G. PIFFARD's case.)

hands ; erythema, vesicles, vesico-papules, papules, and pustules may exist here in their typical form. Fissures, sometimes long and deep, are common about the knuckles and upon the palms, and may also occur on the backs of the hands. They often constitute annoying and even painful lesions, and are hard to manage on account of the constant motion of the skin here. The hands are subject to acute as well as chronic eczema. One or two or all of the fingers may be involved, especially upon their lateral surfaces ; in vesicular eczema of the sides and palmar surface of the fingers the epidermis is often much undermined by fluid, and in some cases multilocular vesicles are formed. In connection with chronic eczema of the fingers the nails are also frequently diseased, while in rare cases they may be the only structure invaded. The remarks that have been made apply with equal pertinence to the toes, but the latter are much less prone to be attacked than the fingers.

The causes of eczema of the hands are numerous. Chemists, workers in alkalies, acids, or dye-stuffs, bricklayers, bakers, grocers, cooks, and others who have their hands continually exposed to the action of animal, mineral, or vegetable irritants and poisons, are liable to be attacked. These constitute the so-called "trade eczemas." The inflammation present in such cases is often true eczema, but not infrequently it is simple or non-eczematous dermatitis. Among the various substances not specifically poisonous, none act upon the skin more deleteriously than alkalies.

DIAGNOSIS AND TREATMENT.

As scabies always affects the fingers in preference, the diagnosis between eczema and this disease is often difficult. The presence of the parasites, as proved by the burrows or their remains, which are to be sought for on the lateral surfaces of the fingers, is at times necessary to determine the diagnosis. In eczema the vesicles are apt to be numerous, and crowded upon a given portion of the hand ; in scabies they are generally more scattered, and are found usually upon all the fingers. The vesicles and pustules in eczema are small ; in scabies they are of variable size, and often large. The vesicles of eczema usually rupture shortly after they form, especially upon parts where the epidermis is thin ; those of scabies are not so acute in development, and often remain whole until disturbed by scratching or rubbing. The vesicles of scabies sometimes exhibit fine puncta in linear form on their summits, the site of the burrow in the epidermis. The peculiar and well-known distribution of scabies over the general surface of the body will, with the above features, usually enable the diagnosis to be promptly made. The vesicular form of the disease affecting the hands may also be readily confounded with cheiro-pompholyx.

Eczema of the hands and fingers is particularly intractable. According to my experience in private practice, many cases are intimately associated with the general health, and especially with a debilitated nervous

system, to which attention should be directed in the treatment. The hands must be protected from all irritating influences, such as sudden changes of temperature, water, the free use of soap, and exposure to heat. Rubber gloves will sometimes prove of service, especially to protect the hands from water in washing household utensils; but I do not regard them favorably therapeutically. In the majority of cases one of the stimulating pastes or ointments, as of calomel, white precipitate, or tar, will prove far more serviceable, used in some cases alternately with one of the milder ointments, pastes, or glycerin jellies. A mild paste that dries rapidly, useful in slight eczemas of the hands and face and in eczema-intertrigo, where fatty substances are not tolerated, is prepared with 10 parts each of dextrin, glycerin, and water, and from 1 to 3 parts of ichthyol. It is to be mixed over gentle heat. It forms a sort of liniment which quickly stiffens on the skin, causes smarting for a moment on eroded surfaces, but soon stops the itching and pain (Unna). A soothing litharge-glycerin-starch paste, which resembles the color of the skin, consists of litharge 10 parts, glycerin 30 parts, starch 10 parts, vinegar 60 parts, to be cooked to 80 parts. It is useful on the hands and fingers and on the face, and is recommended by Unna. A stimulating ointment suitable for patches of chronic, sluggish eczema, as these often occur on the hands, arms, and legs, consists of equal parts of ointment of nitrate of mercury, ointment of acetate of lead, and oxide of zinc ointment. In some cases it may be weakened half with advantage. Permanganate of potash solution, two or three per cent. strength, painted on the part, sometimes acts well.

In connection with fissured eczema of the hands, the subject of CHAPPED HANDS may be referred to, due in most cases to exposure to wind and cold weather, the backs of the hands and of the fingers especially being affected. The face may also suffer in the same manner. The condition is not eczematous, nor is it even eczematoid, though eczema may supervene as a complication. In general pathology it is allied to fissure of the nipple. Soothing oily and greasy preparations, as glycerole of starch, starch-zinc-vaseline or lanolin salves and pastes, are generally sufficient to cure these superficial fissures, but in some cases strong remedies are more efficacious, such as carbolic acid 1 part, glycerin 8 parts; or a lotion composed of caustic potassa, $\frac{1}{2}$ per cent.; glycerin and alcohol, of each 20 parts; water, 60 parts. A mild ointment of tannic acid and camphor is beneficial; also a lotion of glycerin 2 parts, compound tincture of benzoin 1 part, and water 4 parts. Bathing the part with weak cider vinegar and afterwards greasing it with mutton tallow is a well-known domestic remedial measure.

ECZEMA PALMARUM ET PLANTARUM.—Eczema presents similar features in both of these regions, but is of much more frequent occurrence on the palms than on the soles. Owing to the thickness of the horny layer of the epidermis, it gives rise to peculiar lesions, which sometimes



ECZEMA.

MARGINATE, SQUAMOUS AND FISSURED VARIETY, OF THE PALM AND FINGERS.

Both hands are similarly invaded, the palms and fingers being the seats of a harsh or corneous, thickened state of the epidermis, illustrating a somewhat common form of eczema, especially among persons engaged in out-of-door work. The marginate border might suggest a syphilitic manifestation, but the disease was eczema, as its course showed. (Dr. HENRY W. STELWAGON'S case.)



ECZEMA.

VARIETY RUBRUM.

The hands and forearms, both flexor and extensor surfaces, are the seat of a chronic diffuse inflammation, with intense redness, swelling, infiltration, here and there moist exudation, slight crusting and scaling, and fissuring. The hands, especially the fingers, are in consequence stiff and immobile. The subject is a middle-aged woman. Duration six months. A severe form of the disease. (The Author's case.)

obscure the diagnosis. Infiltration, thickening, hardness, callosity, roughness, raggedness, dryness, and fissuring usually mark the disease. It is generally chronic, and frequently lasts a long while. The fissures are often deep, reaching to the corium, and may be so painful that the patient will be unable to use his hands. One or both palms or soles may be affected, either alone or in connection with other parts, and at times both palms and soles are simultaneously attacked.

The diagnosis, as stated, is sometimes attended with difficulty, inasmuch as both psoriasis and syphilis are often localized upon these regions and may bear a close resemblance to eczema. The fissures of eczema are apt to be slightly moist and to show signs of blood, while in psoriasis they are dry and seldom bleed. The patches of eczema are generally larger and more diffused than those of psoriasis. In psoriasis the edges usually terminate abruptly; in eczema in most cases they pass gradually into the healthy skin, seldom being sharply defined. The color of psoriasis is usually either pinker or deeper than that of eczema, and looks less inflammatory. The scales, moreover, of psoriasis are silvery or grayish in tint, while in eczema they are more or less yellowish. The scales of psoriasis are also larger and thicker and more abundant than those of eczema. The itching is usually more marked in eczema than in psoriasis, and may even be absent in the latter disease. The presence of either disease on other parts of the body will be sufficient to clear away doubt.

Syphilitic manifestations not infrequently show themselves on the palms and the soles, and must be distinguished from eczema. The infiltration of syphilis is often distinctive in character, and is of a firmer nature than that of eczema; it also generally extends deeper into the tissues, and gives the sensation of a compact deposit in the skin. Eczema is usually much more uniformly diffused than syphilis; the patches of syphilis are apt to be smaller and more circumscribed, and to have a tendency to spread on the periphery. In syphilis the line of demarcation between disease and health is generally sharply drawn. Syphilis, as a rule, does not itch, while eczema almost always does, though not necessarily severely. In both diseases itching is a variable symptom, and one that should never be relied upon. The history may be of assistance in determining the nature of the lesion.

The treatment for chronic cases is that of eczema rubrum, stimulating and strong remedies being, as a rule, demanded. There are, however, many exceptions to this statement; often only the milder preparations are tolerated. Tar, ichthyol, calomel, white precipitate, weakened ointment of nitrate of mercury, and oleate of mercury, are all useful. Two drachms of tar ointment, six drachms of vaseline, and half a drachm of calomel, will be found a serviceable formula. Ointment of nitrate of mercury may be prescribed in the strength of one or two drachms to the ounce of simple ointment.

Before prescribing, the presence or absence of fissures should be taken into consideration ; also whether the disease is in small patches or covers the entire surface, and finally whether the disease is acute, subacute, or chronic. As a rule, ointments are well borne and prove useful. In eczemas of the palms and soles the salicylic rubber plasters, as recommended by Unna, are of service, but active irritation resulting from their employment should be guarded against. Klotz's or the author's salicylic plasters are seldom irritating, and are of much service, the strength of the salicylic acid (from two to ten per cent.) being adapted to the needs of the case. A mercurial plaster, with or without salicylic acid, is sometimes useful. Where fissures exist, liquor gutta-perchæ, collodion, or compound tincture of benzoin, either alone or with ten or fifteen grains of salicylic acid or resorcin to the ounce, sometimes affords relief ; in other cases these drugs may be employed much stronger, forty or fifty grains to the ounce, and in this strength are particularly serviceable in dry and fissured eczema. Liquor gutta-perchæ may be spread thinner on the skin than collodion, and for this and some other reasons is a better vehicle for many drugs. Corrosive sublimate, half a grain or one grain to the ounce, may be used with one of the fixed dressings referred to, as liquor gutta-perchæ. Acetanilid, a half-drachm to one drachm to the ounce of petrolatum, is sometimes highly beneficial in chronic cases.

Where there is much thickening of the horny layer, with cornuous plates or callosities, alkalies and acids are of service. An "alkaline cream," useful for destroying thickened and hard epidermis and seborrheic skin, may be made with glycerin 16 parts and potassium carbonate 1, 2, 3, or 4 parts, according to the strength of the alkali required. Callous skin may also be softened by applications of glacial acetic or lactic acid.

ECZEMA UNGUIUM.—Eczema not infrequently invades the nails. One or two or all may be affected, in most cases some more so than others. Symmetry is rarely noted. They are, however, not often involved alone, but commonly in connection with eczema of the fingers. The disease is characterized by roughness, want of polish, unevenness, exfoliation, or a punctate, indented, worm-eaten or honey-comb appearance, which latter sign, however, belongs also to psoriasis. The diagnosis between eczema and psoriasis of the nails is often difficult if the nails alone be taken into consideration. The nail may remain in its diseased condition until by degrees it recovers, or may be cast off and regenerated ; but the latter course is not common, except in grave cases of generalized eczema. The lesions vary and may change their seat from time to time. Internal treatment, especially arsenic, is of the greatest importance. Local treatment, especially stimulation, as with hot water, scraping the nail, oily applications, and caustic solutions to the nail, is indicated in most cases. Stimulating remedies may sometimes with advantage be directed to the nail-fold as well as to the nail.



ECZEMA.

CHRONIC, CONFLUENT PAPULO-SQUAMOUS VARIETY, OF THE BACKS OF THE HANDS
AND FINGERS.

The disease occurred in a neurotic seamstress aged forty, was confined to the hands and fingers, and was of six months' duration. Some of the lesions were reddish and distinctly papular, discrete and confluent, most of them being scaly. Between the fingers and on the index finger excoriations with blood-crusts existed. Complete recovery in one month, in the University Hospital. (The AUTHOR'S case.)



ECZEMA.

CHRONIC, VERRUCOUS VARIETY, OF THE SOLES OF THE FEET.

The disease exists in the form of two symmetrical, circumscribed, thickened, dry, warty, fissured, corneous patches, occurring in an old woman, and confined to this region. Duration five years, with a history of exacerbatons. (Dr. ROBERT W. TAYLOR's case.)

IMPETIGO.

IMPETIGO IS CHARACTERIZED BY VARIOUSLY SIZED AND SHAPED SUPERFICIAL VESICO-PUSTULES AND PUSTULES, UNACCOMPANIED, AS A RULE, BY MARKED AREOLAR INFLAMMATION AND SUBJECTIVE SYMPTOMS, USUALLY RUNNING AN ACUTE COURSE.

Symptoms.—The term impetigo has long been in use to express a disease characterized by the formation of pustules, but all pustular diseases are by no means to be regarded as varieties of impetigo. Pustular eczema, for example, is not impetigo, although it is still so considered by some authors. I shall discuss the subject mainly from the clinical aspect, because it is an important phase which must not be lost sight of. If pustular eczema, ecthyma, and certain rare forms of pustular or impetiginous disease (such as impetigo herpetiformis and allied diseases) be excluded from the definition, impetigo will be found to consist, for the most part, of single or multiple, small or large, superficial pustules, possessing certain distinctive characters. Such lesions occur as a result of the presence of staphylococci, and are similar in their etiology and pathology to furuncle, whitlow, and sycosis vulgaris. They are local infections, due to the several varieties of staphylococcus flourishing upon a favorable soil. They are all due to pus cocci, the result of inoculation, which occurs in many ways, often through abrasions and scratching. Hence impetigo is met with as a complication in eczema, scabies, pediculosis, and various other diseases, especially where there exists altered and defective epidermis. The clinical pictures which these complications may present are numerous and diverse. Impetigo is a disease, for the most part, of infancy and childhood, occurring much more rarely in adults; when it is met with in the latter it will frequently be found to have been contracted from the former.

But the idea to be conveyed particularly by impetigo is a pustule without much of an areola and without an induration. It is a superficial lesion. It is usually circumscribed, circular or ovalish; tends to crust, and to pursue in most cases an acute course. It is one of the simpler cutaneous lesions, and is amenable to local treatment. It possesses relationship with various diseases in which superficial suppuration occurs, with which it may blend. For this reason its features may not be clearly defined or distinct. All varieties and forms of impetigo are contagious; some are readily communicable by direct contagion, others only feebly so or under peculiar conditions. They are also inoculable and auto-inoculable, as numerous experiments have proved, and are therefore spread by scratching. The disease is closely allied to ecthyma, to furuncle, and to cutaneous and subcutaneous abscesses in general. It differs from eczema in the fact that its lesions are limited in character, and that the eruption as a whole does not tend to spread diffusely and superficially over the surface.

Many authors (as Unna and Dubreuilh) consider all the so-called varieties under one caption, ignoring the special clinical features. Impetigo contagiosa is impetigo, and impetigo simplex is impetigo contagiosa, for these authors; all varieties are regarded as one and the same disease, and the varieties as unworthy of special recognition.

There are two varieties of impetigo, however, which on account of their striking and peculiar clinical features the author thinks call for special description: one of these is IMPETIGO SIMPLEX, the other is IMPETIGO CONTAGIOSA.

IMPETIGO SIMPLEX.—This may be defined as an inflammatory pustular disease, characterized by one or more pinhead, pea, or finger-nail sized, discrete or confluent, circular or irregularly shaped pustules, usually running an acute course, unattended, as a rule, by marked itching or burning. It is the simplest variety of impetigo, but is by no means the commonest. On the contrary, it is not often met with typically developed. When typical it manifests itself by the formation of one or more well-defined pustules. They begin as pustules, the pustular character of the lesion showing itself in the earliest stage. When fully developed they vary in size from a small to a large split pea, or even to the size of a finger-nail. They are circular or irregular in shape; are usually raised above the surrounding skin; have thick walls; and at first are generally surrounded with a slight areola. The elevation is sometimes striking, and the lesions may have a somewhat semiglobular form. There is no central point, depression, or umbilication. The pustules are grayish or whitish-yellow, and are, as a rule, tensely distended with fluid. After they have arrived at maturity the areolæ subside, leaving the lesions even more defined. They may now look like little, split-pea sized, whitish or yellowish candy mint-drops. There is but little surrounding infiltration. They manifest no disposition to rupture. They are discrete, and occur here and there in a disseminated manner. Even when situated close together, as may occur upon the hands, they do not incline to coalesce, for the reason that they are sharply circumscribed and have thick, strong walls. In number they vary from two or three to a dozen or more. They may occur upon all parts of the body, but commonly appear on the face, hands, fingers, feet, toes, and lower extremities, and sometimes upon the palms and soles. They are not attended, as a rule, by itching or burning. They run an acute course, usually lasting a week or ten days. They may appear suddenly, and are apt to come out one after another during the first week. Having reached their full size, they remain in this condition for a day or two, when they undergo absorption and crusting. When they are ruptured through contact with external agencies a thin puriform fluid exudes; as a rule, it is not thick, as might be expected from the appearance of the pustules. If ruptured or pricked with a needle early in their course, usually they fill again with fluid. The crusts desiccate



IMPETIGO.

ACUTE, SIMPLE VARIETY.

The subject is a boy, aged twelve, whose face only is invaded. Disseminated, superficial pustules, discrete and confluent, tending to dry up into yellowish and brownish crusts, exist. Duration one week. No history of contagion. No symptoms of eczema. Recovery occurred rapidly under simple local treatment. A common form of the disease. (The Author's case.)



IMPETIGO.

ACUTE, SIMPLE VARIETY.

The case is that of a healthy, strong young man, whose face is well covered with discrete and confluent brownish, bulky crusts. The lesions are discrete and confluent, having existed ten days. They are disseminated, and are unusually profuse. They represent former, flat and raised, superficial pustules, which formed rapidly and dried quickly into crusts. (Dr. GEORGE HENRY FOX's case.)

and drop off, leaving reddish bases without pigmentation or scar. The disease runs an acute, benign course, inclining to terminate in speedy recovery.¹

It is confined for the most part to children. I have observed it usually in well-nourished and healthy subjects who have had little or no previous illness. It is in no way connected with eczema, nor is it usually associated with disorder of the alimentary canal. In adults I have observed it chiefly upon the hands and fingers. So far as my clinical observation goes, I have failed to note a history of contagion, although (as in the case of other similar pustular affections in which staphylococci are present) experiments would probably show that it is both inoculable and auto-inoculable. It is one of the rarer pustular manifestations. Of late years I have met with but few marked cases. It possesses distinctive clinical features, and when encountered is easy to recognize.

The lesion from beginning to end is a typical pustule, the first manifestation upon the skin possessing all the characters of a true pustule, which continue through the entire course of the disease. At no time are the lesions seated upon a highly inflammatory base, as is the case in ecthyma; they rise somewhat abruptly from the surface, much in the manner of well-formed lesions of impetigo contagiosa. Anatomically the lesion is well formed, being circumscribed, sharply defined, and possessing thick walls.

DIAGNOSIS.

This variety has features sufficiently distinctive to allow of its being separated from other varieties of impetigo. It may be distinguished from pustular eczema by the size and peculiar conformation of the pustules, the pustules of impetigo being large and prominent, while those of eczema are small and are not raised. In impetigo simplex the pustules are usually discrete, rarely occur in numbers, and do not incline to run together, whereas in eczema they are seated close together, are numerous, and manifest a disposition to coalesce, forming pustular patches. In impetigo there is but little infiltration, whereas in eczema infiltration is a pathognomonic feature. In impetigo the pustules do not incline to rupture, and there is consequently no discharge; in eczema the pustules usually break early in their course, and are succeeded by extensive crusting, the exudation, moreover, being apt to continue. In impetigo there is little or no itching, whereas in eczema this is generally marked. The disease viewed in its totality as a clinical picture does not suggest pustular eczema. It is an acute process, runs a definite course, and shows no tendency to prolong itself or to become chronic.

It bears a resemblance in its general features and course to impetigo

¹ Two typical examples of the disease are reported by me in the Amer. Jour. of the Med. Sci., Oct. 1888. A case is also recorded by Leslie Roberts (Brit. Jour. of Derm., May, 1895).

contagiosa, but the two diseases clinically are different. The initial lesion in impetigo contagiosa is generally a vesico-pustule; in simple impetigo it is always a pustule. The lesion of impetigo contagiosa is remarkably superficial; that of impetigo simplex has a deeper seat and thicker walls. The pustule of impetigo contagiosa tends to flatten, and is often marked by umbilication; that of impetigo is raised, and is without central depression. The relation of this variety of impetigo simplex to impetigo contagiosa, however, is probably close. They may prove upon further observation to be identical in nature, but nevertheless when typically developed, as in the cases reported by myself and by others, the lesions are so different in appearance, history, and course from common impetigo contagiosa as to render advisable a special description of them. In their strictly pustular character from beginning to end, and their thick walls, the lesions are entirely different from the superficial, thin-walled vesico-pustular or bullous lesions of impetigo contagiosa.

Simple impetigo somewhat resembles ecthyma. In ecthyma the pustules are flat, and are surrounded by extensive, inflammatory, hard bases; in impetigo they are elevated, and generally have only a slight areola. The crusts are also different; in ecthyma they are brownish or blackish in color, are large and flat, and are seated upon an excoriated or it may be an ulcerated surface. Impetigo simplex usually occurs in the healthy and strong; ecthyma in the debilitated and cachectic.

OTHER FORMS OF SIMPLE IMPETIGO.

There are other forms of simple impetigo which may be regarded either as variations from the well-defined, perfect pustule I have described, or, on the other hand, as occupying a position nearer to the vesico-pustular variety of impetigo,—the so-called impetigo contagiosa. They are hybrid types. These are characterized by the lesions being ill defined, and by their running an irregular course. In classification they occupy no definite position. They are variable in number, form, and size (often small and insignificant), and in other features, so that it is difficult to define them. They are, however, always pustular, and may be regarded as irregular anomalous forms of simple or of contagious impetigo. Lesions of this kind are tolerably common among the poorer classes, crop out unexpectedly here and there, singly or in numbers, and often complicate other diseases, especially eczema and pediculosis. They play a part in connection with certain common forms of dermatitis, especially affecting the extremities, particularly the legs, not infrequently following scratching and other forms of traumatism. This subject will be again referred to in considering dermatitis in general. As to their contagious nature from a clinical stand-point, it is difficult to speak positively, but it may be stated that they are usually contagious in a much less degree than the variety known as contagiosa.

In the majority of cases but little medication beyond asepsis and some



IMPETIGO.

VARIETY CONTAGIOSA, WITH BLEBS.

The subject is a child. The lesions are acute, superficial vesico-pustules and blebs, which tend to crust rapidly. The crusts in some places are depressed in the centre, with everted edges. Face, neck, and hands affected. This variety occurs chiefly in children, and in addition to being contagious is at times epidemic. It is usually met with on the face and the hands. (The AUTHOR's case, from a water-color drawing.)



IMPETIGO.

CONFLUENT PUSTULAR VARIETY.

The face is the seat of discrete and confluent, disseminated, raised pustules, which possess all the characters of common impetigo. Upon the auricle the lesions are confluent, the disease here resembling eczema. Such cases of impetigo may pass into eczema. The subject is a girl, ten years of age. Duration two weeks. (The AUTHOR's case, University Hospital.)

germicide lotion or ointment is necessary. The pustules, as soon as they mature, may be opened with a sharp bistoury. They should be protected from external influences and the rubbing of the clothing, and may be dressed with some mild mercurial or sulphur ointment or paste, as in the case of impetigo contagiosa. This variety usually inclines to spontaneous recovery.

IMPETIGO CONTAGIOSA.—This is an acute, inflammatory variety, characterized by superficial, circular or ovalish vesicles, vesico-pustules, pustules, or blebs, the size of a pea or finger-nail, which soon end in superficially seated, yellowish or brownish crusts. It is also known (especially in Great Britain) as **PORRIGO CONTAGIOSA**, a name which antedates impetigo contagiosa. The latter was given to the disease by Tilbury Fox in 1864. It is sometimes preceded or accompanied by slight constitutional disturbance, especially in infants. Occasionally the sub-maxillary glands are swollen and painful. Small, discrete, flat or raised vesico-pustules are first usually noticed, which in a day or two become more or less pustular. They tend to increase in size rapidly, until they may become blebs, usually with cloudy or milky contents. They are circular or ovalish in shape, and may be marked by central umbilication. They are generally surrounded by a slight areola, which disappears upon their maturation. They are superficially seated, break down and become excoriated easily, and show a raw surface with a shreddy pellicle, like a scald. They spread markedly on the periphery, the apparently sound horny layer being usually more or less undermined and partially loosened in advance of the visible lesion. They seldom exist in large numbers, as a rule, from five to ten or fifteen occurring at the same time. Not infrequently, when situated close together, they coalesce and form a patch, especially about the angles of the mouth and eyes and about the nares. In a few days, either from rupture or from their natural course, crusts form. These are almost always present when the case first comes under observation. They are flat, more or less elevated above the surrounding skin, yellowish, straw-colored, or brownish, dirty-looking, and but slightly adherent. They are thin, depressed in the centre, slightly curled up at their borders, and in infants and children usually have a stuck-on appearance.¹ Beneath them exist excoriations, which secrete a thin, watery or puriform fluid. After the crusts have become dry they fall off, leaving a slightly reddish base, which gradually fades away. The lesions may all show themselves simultaneously, or, as often occurs, they may appear one after another or in successive crops. Itching is not common, and subjective symptoms may be absent altogether. It may be readily spread by auto-inoculation. Its course is usually a definite one, lasting from one to two weeks.

¹ Colored portraits representing the typical form of the disease may be found in the Atlases of Tilbury Fox and of the author. The "stuck-on" appearance was first described by Tilbury Fox.

The usual seat is the face and hands, especially the former, but the legs and arms, as well as other regions, may also be attacked. Stelwagon's¹ statistics show that in 103 cases the face was involved in 49 cases, the face and hands in 12, and the scalp in 1 case, while there was a general distribution of the lesions in only 4 cases. A typical, extensively developed case, in a boy aged twelve, came under my observation in which the lesions were strictly confined to the buttocks. They were very numerous, the entire surface of the buttocks being studded with them. They were all vesico-pustular and in the same stage of development, having come out as one crop. At the time there were no crusts. There was no history of contagion. The mucous membrane of the mouth and the conjunctivæ, and even the tonsils, are sometimes invaded.

VARIATIONS FROM THE TYPE.

Variations in the character of the lesions and in their course require to be mentioned. These depend upon the age of the subject, the state of the general health, and other circumstances. In some cases the lesions are few, small or very large, and scattered; in others they are confined to the trunk or extremities. Sometimes the crusts are extensive, bulky, and adherent, but the superficial character of the process is, nevertheless, always notable. Occasionally the lesions are pustular from the beginning, as in *impetigo simplex*. The resemblance to the lesions of *pemphigus* is common, blebs rather than vesico-pustules or pustules existing, which has given rise to the term *IMPETIGO CONTAGIOSA BULLOSA*. This variety is commoner than is generally supposed. Notwithstanding their bullous character, the blebs are usually easily cured by local remedies. Not infrequently the lesions assume an anomalous or an abortive form, being ill defined or irregular in their development and course. The disease has been noted to occur in connection with ringworm elsewhere. Occasionally it simulates vesico-pustular ringworm, and on the nail-fold it may resemble acute whitlow.

Ulmann² met with a case which possessed all the clinical features of *impetigo contagiosa*, and that diagnosis was given until the microscope revealed the presence of the *trichophyton* fungus. He therefore concludes that one variety of *impetigo* may be due to this fungus, and another to *staphylococci*.

In rare instances circinate or gyrate, serpiginous forms occur, after the manner of syphilitic pustulo-crustaceous lesions. Cases of this kind have been figured by Rayer and by Schamberg.³ In the case of the latter observer (which I had the opportunity of examining) the axillæ and the pubes were the seat of this peculiar form of eruption. In rare instances

¹ Morrow's System of Dermatology, N. Y., 1894.

² "On the Etiology and Pathology of Parasitic Sycosis," *Wien. Klin. Wochenschr.*, Nos. 18-20, 1896.

³ *Jour. Cut. and Gen.-Urin. Diseases*, May, 1896.

lesions taking on an herpetic and a variola-form aspect, as in the cases described by F. P. Foster under the title "*herpes contagiosus varioliformis*,"¹ are met with. Such cases seem to be more closely related to impetigo contagiosa than to any other recognized disease. Foster records twelve cases which he states closely resembled impetigo contagiosa, except that instead of vesico-pustules papules existed, the process in most instances terminating either in resolution or in desquamation. I have met with cases in which the lesions were maculo-squamous and papulo-squamous, resembling both *tinea circinata* due to the *trichophyton* and psoriasis. Fungus was searched for, but could not be found. The history and course of the disease, especially its rapid and spontaneous evolution and involution, determined the diagnosis.

ETIOLOGY.

Impetigo contagiosa is encountered chiefly among the poor and improperly cared-for. It is rarely met with in the upper walks of life. In my own experience but few cases have been encountered in private practice. It is confined almost exclusively to children. Cleanliness exercises a certain degree of control over the spread of the disease, but when it occurs in epidemic form in lying-in institutions even antiseptic measures are sometimes unable to control it. It is both contagious and auto-inoculable. In some instances it follows vaccination. The relation between it and vaccination referred to by numerous observers is not clear, but that such at times exists there can be no doubt. The cases which have come under my observation have on several occasions followed vaccination. On the other hand, in eighty-six cases observed by Stelwagon,² only six were recorded as succeeding vaccination. It seems also to be related in some way to varicella. Hyde³ states that he has seen it occur typically in a series of cases each of which was convalescent from varicella, and in one instance in a young woman convalescent from variola. Sometimes it manifests itself in the form of an epidemic.⁴ It is certainly more prevalent in some years than in others. Many years ago, within a few weeks a large number of cases, from various districts of the city, came under observation at the several institutions with which Dr. Van Harlingen and the author were connected. On one occasion as many as twenty cases, all children of poor parents, were found to be affected at one time in one block of a small street. An epidemic occurred in a regiment in Dublin, affecting one hundred soldiers, the disease having originated among some children and from them spread to the troops.⁵ Hutchinson⁶ gives a report of an epidemic in a lying-in institution, where it was extremely prevalent,

¹ Arch. of Derm., Jan. 1875.

² Med. Record, Dec. 22, 1883.

³ Practical Treatise on Diseases of the Skin. Phila., 1893.

⁴ See a paper by Van Harlingen, Med. and Surg. Reporter, Sept. 8, 1877.

⁵ Lancet, 1871.

⁶ Archives of Surgery, vol. iii. (Jan. 1892.)

persisting for months in spite of every known precaution. The affection seems to be commoner in London than elsewhere. It is said cases are constantly occurring there. Such, however, is not the case in Philadelphia nor in some other cities in the United States. The disease was first graphically described by Tilbury Fox,¹ who pointed out its distinctive features and its contagious nature, separating it from pustular eczema, but it had been recognized and described before by Plumbe, Startin, and even by earlier authors. Dubreuilh² and others are of the opinion, as a result of their investigations, that the staphylococcus aureus, and perhaps the staphylococcus albus, are the pathogenetic organisms of the disease. Various fungi have also been discovered in the lesions, some resembling the trichophyton, but there has been a lack of uniformity in the observations made.

DIAGNOSIS AND TREATMENT.

Impetigo contagiosa is liable to be confounded with impetigo simplex and with eczema pustulosum, but may be distinguished by the history, character, and course of the lesions. The crust is a superficial one, often having the appearance of being stuck on. The lesions are usually discrete and itch but little, in both of which points they differ from those of eczema. The relation of impetigo contagiosa to eczema pustulosum is not always clear. Cases of impetigo occur in which the symptoms are eczematous as well as impetiginous. Such instances probably represent a combination of the two diseases, impetigo being engrafted upon eczema. The diagnosis in such cases is difficult. It may also bear a resemblance to varicella. The vesicles and vesico-pustules of varicella, however, are smaller, and are not attended with proportionately the same amount of crusting, nor are the crusts of the same character as regards their color and consistence. The usual distribution of varicella over various regions of the body will also aid in distinguishing the diseases, while the lesions are, furthermore, generally smaller and more numerous than those of impetigo contagiosa. It must also be distinguished from ecthyma, from pemphigus, and from herpes iris. To pemphigus in particular it often bears a close resemblance. Some of the cases of so-called "acute pemphigus in infants" and children (especially those occurring epidemically, and in institutions) are probably more closely related to this disease than to pemphigus. It is to be distinguished also from scabies, a point to which Van Harlingen³ has directed special attention. In most of the cases that I have observed the lesions have been well defined, so that there could be no question as to diagnosis. But when abortive or anomalous lesions or complications occur, there may be much embarrassment in arriving at a conclusion.

¹ Brit. Med. Jour., 1864, and in Jour. of Cut. Med., 1869.

² Annales de Derm. et de Syph., 1890, p. 289.

³ Hand-Book of the Diagnosis and Treatment of Skin Diseases. Phila., 1895.



IMPETIGO.

ANNULAR AND SERPIGINOUS FORM.

The face, neck, arms, axillae, and pubes of a boy aged ten are affected. The centres of the patches were almost free of disease. The annular and serpiginous crusts were yellowish brown, loosely attached, bulky, and friable. Here and there distinct pea-sized vesico-pustules existed. Duration eight weeks. Recovery under local treatment. A rare form. (Dr. JAY F. SCHAMBERG's case. Seen by the AUTHOR.)



IMPETIGO.

ANNULAR AND SERPIGINOUS FORM.

The case is that of a young man with the lesions on the cheek in the form of elevated, bulky, yellowish-brown, linear, almost annular, serpiginous crusts, superficially seated. Duration ten days. Much itching at night. On the forearm and fingers there existed the characteristic pustules of this disease. Such cases in adults, especially when they pursue a slow course, are liable on account of their configuration to be suspected of being syphilitic. A rare form. (Dr. JOHN A. FORDYCE's case.)

The affection tends to spontaneous recovery, and only mildly stimulating remedies are required. Oxide of zinc paste, with ten grains of salicylic acid and five of carbolic acid to the ounce, together with cleanliness, will often prove sufficient. An ointment of ten grains of ammoniated mercury or of naphthol to the ounce, or a weak sulphur ointment or paste, may also be used advantageously. Sometimes lotions of diluted black wash or of weakened sulphurous acid are of service, especially where there is much crusting. Dubreuilh speaks well of the following ointment :

R Plumbi Acetatis, 1.0 ;
Acidi Salicylici, 2.0 ;
Zinci Oxidi, 20.0 ;
Adipis, 50.0 ;
Petrolati, 50.0.

Pathology.—Impetigo simplex, impetigo contagiosa, and ecthyma have been more or less confounded. By many authorities they are regarded as being merely different manifestations of one disease, whose characteristic feature is the formation of pus in the upper layers of the skin, constituting epidermic abscesses, the several forms of eruption being all due to staphylococci of one variety or another. Thus, Bockhart¹ showed, as the result of experiments, that certain impetiginous or pustular affections of the skin, including so-called impetigo, furuncle, and sycosis, were all due to one cause, the presence of the staphylococcus aureus et albus. Other observers have arrived at the same conclusion, so that the uniform existence of these cocci in suppurative disease of this kind may be accepted as conclusive. In the case of impetigo, impetigo contagiosa, and ecthyma, they have been investigated for the most part as a group, and not as distinct individual diseases, the clinical features of each being ignored. The latter the dermatologist cannot permit. They should, therefore, be considered as a group of pustular diseases only so far as concerns the micro-organisms present. Clinically they are different. Leroux¹ states that in the "impetigo of infants" he was able to establish the fact of contagion in 220 cases out of a total of 750. In 120 inoculations he obtained 79 positive results, in some cases being able to continue the inoculations up to the sixth series. Several varieties of staphylococcus pyogenes and streptococci were found in the pustules. In the disease produced experimentally by inoculation he found diplococci and streptococci, but no staphylococci. Cultures of streptococci obtained from the pustules of impetigo inoculated upon children have reproduced impetigo, in the vesicles of which streptococci were also found ; from all of which Leroux concludes that impetigo is due to a special microbe, the "streptococcus of impetigo," and that the staphylococci found were the results of secondary infection. This observer, however, in common with some others, does not distinguish

¹ Monatshefte f. prakt. Derm., 1887.

² Annales de Derm. et de Syph., No. 3, 1893.

between the simple and the so-called contagious varieties. While it must be admitted that this is sometimes difficult, in most cases the clinical features are so distinctive in the contagious variety as to permit of no confusion. The vesicular, vesico-pustular, or bullous character of the lesion is peculiar to impetigo contagiosa, and it is this variety of impetigo that is pre-eminently contagious, and at times is epidemic.

As Unna¹ remarks, there exists in impetigo a remarkable contrast between the slight appearance of inflammation beneath the pustule and the large amount of pus in it, especially when compared with the pustules of variola and of herpes zoster. There occurs a simple attraction outside of the vessels rather than any notable injury of them. The pustule has its seat under the corneous layer, between it and the prickle layer. The latter layer, as well as the corium, remains intact. The pus cocci are found under the corneous layer, collected especially in the centre of the pustule, becoming less numerous towards the periphery. The structure of the lesion is constant. On the other hand, the pustule of eczema is much more polymorphous in its formation. The staphylococci, Unna² states, grow only outside the cells; neither the pus nor the epithelial cells ever contain cocci. The arrest of growth of cocci in the course of pustulation, consequently, does not depend on phagocytosis. The crusts also contain cocci, and, indeed, they often thrive in the fissures of crusts, where the conditions are favorable, more luxuriantly than in the fluid of the pustule. The crusts, therefore, may be regarded as contagious. Gilchrist's examination of a typical contagious impetigo vesicle gives results very similar to those obtained by Unna.

Unna³ gives the points which differentiate the impetigo pustule from the eczema pustule histologically as follows. The contents in impetigo are altogether purulent; in eczema they are sero-purulent. In impetigo the contents are hardly movable, the numerous pus-cells holding the cocci fast under the roof of the pustule; in eczema the contents are thin, and the cocci from the beginning are disseminated uniformly in the lesion. In impetigo the corneous layer is unchanged, the roof is sharply separated from the contents, and the cocci form grape-like clusters; in eczema the corneous layer is in places softened, the roof in the centre passes into the fluid contents, and the cocci form double cocci and mulberry-like clusters. In impetigo the staphylococci are found in all cases without the cells, are of similar size, are closely crowded together in the clusters, and are smaller than the morococci; in eczema the morococci lie partly free and partly in the leucocytes (like the gonococci), and in the clusters are of variable size. As has been pointed out in the chapter on the pathology of eczema, the relation of the staphylococci and the morococci towards the leucocytes, moreover, is different.

¹ Histopathologie der Hautkrankheiten. Berlin, 1894.

² Op. cit., p. 256.

³ Monatsh. für prakt. Derm., Bd. xiv. (1892) p. 466.



IMPETIGO.

VARIETY CONTAGIOSA.

The drawing represents a section of a very small pin-head sized, tense, clear vesicle situated on the lobe of the left ear, surrounded by a slight inflammatory area. The duration was less than twenty-four hours. The other lesions on the face (of a boy fourteen years of age) were typically characteristic of the disease. The boy's brother had the same affection. A similar vesicle was excised from the lobe of the ear of the second boy, and the pathological anatomy was the same. The vesicle (B) is situated between the horny layer and the mucous layer, and is thus formed by the lifting up of the horny layer. The contents of the vesicle consisted of large numbers of polynuclear leucocytes (P), a considerable number of round mononuclear cells (M), a few detached epithelial cells, a small quantity of fibrin, and a large quantity of coagulated albumen (serum). There was a collection (A) of polynuclear cells in the centre of the vesicle, and in the collection were found, on special staining, a large number of cocci, which on culture from other vesicles proved to be the *staphylococcus pyogenes aureus*. The stratum mucosum (R) was swollen, but there were no more nuclear figures than normal. Numerous polynuclear leucocytes were found making their way through this layer. The corium (C), chiefly the upper portion, showed an acute inflammatory condition,—namely, dilated vessels (V), numerous migrated polynuclear leucocytes, a serous infiltration of the corium, and a marked increase in the number of round mononuclear cells. Cultures were taken from about twelve cases of this disease,—*i.e.*, from the vesicles,—and either the *S. aureus* or the *S. albus*, or both, were always obtained. Two experiments were carried out by inoculating other persons from the vesicle, with positive results. Magnified about 50 diameters. (Dr. T. CASPAR GILCHRIST's case, section, and description.)

ECTHYMA.

ECTHYMA IS CHARACTERIZED BY ONE OR MORE PEA OR FINGER-NAIL SIZED, GENERALLY DISCRETE, FLAT PUSTULES, SITUATED UPON AN INFLAMMATORY BASE, FOLLOWED BY YELLOWISH OR BROWNISH CRUSTS AND PIGMENTATION, USUALLY OCCURRING IN SUBJECTS IN DEPRAVED HEALTH.

Symptoms.—Ecthyma is the most perfectly pustular of all the diseases of the skin. It is invariably pustular. The word is derived from *ἐκθύμα*, a pustule. The lesions are usually well developed, and may exist singly or in numbers, as many as a dozen not infrequently being present. As a rule, at first one or two appear, then others. They are circular, ovalish, or irregular in form, circumscribed, possess a sharp outline, and are notably flat and broad. They tend to spread out laterally rather than to rise up. They are usually full, but not always tensely distended. At first they are grayish or yellowish; later they generally become somewhat reddish and streaked, owing to the admixture of blood. In size they vary from that of a pea to that of a finger-nail, not infrequently being as large as a dime or a quarter-dollar. Immediately around their margin the skin is generally of a bright, vermilion red color, forming a marked areola of considerable extent, which is usually firm, sometimes indurated, and is sensitive or painful. In other cases the color is darker or livid (ECTHYMA LIVIDUM). After existing three or four days, they become less tense or flaccid, begin to desiccate, and are converted into flat crusts of a brownish color. They are usually adherent, and when raised show an excoriation or an ulcer with a yellowish, sanious secretion. Two varieties of the disease occur, the SUPERFICIAL and the DEEP-SEATED. The former is the common variety (ECTHYMA SIMPLEX, ECTHYMA VULGARE); the latter ("ecthyma térébrant" of French authors, ECTHYMA GANGRÆNOSUM) is rare, and in the United States is seldom encountered. It is a variety confined largely to children, in particular to those who have been depressed by severe fevers, the exanthemata, variola in particular, diphtheria, and the like.

My remarks will apply mainly to the simple variety. The extremities, especially the thighs and legs,¹ the shoulders, and the back, are the regions commonly attacked. The face and scalp usually escape. The lesions have an acute course, developing and running their existence in from one to two weeks; after they have begun to crust, the process proceeds more slowly, and terminates in two or three weeks by the crusts falling off and leaving more or less pigmented spots. Brownish pigmentation of the lesion is common, and disappears slowly. The destruction of tissue in the simple variety scarcely amounts to ulceration. Sears occur only when ulceration has been marked, and seldom in the

¹ See colored drawing, Plate J J, in the author's Atlas of Skin Diseases, an example of ecthyma simplex, occurring in the usual form and region. Representations of typical ecthyma are not common in illustrated works of the present period.

simple variety, as I have met with it. The pustules are apt to appear successively during the first week or two, and where the cause persists, as is often the case among the poor, they may continue to show themselves for an indefinite period. Heat, more or less itching, soreness, and pain are usually complained of. The disease is sometimes announced with slight febrile disturbance, which tends to subside upon the appearance of the eruption. The lesions have a regular evolution. They are at their height about the fourth day and decline on the sixth or seventh. Lymphangitis and adenitis may both accompany the process. It is a disease of the skin only; the mucous membrane escapes. The latter membrane is not inoculable, as the experiments of Tanturri and of Leloir have shown. It is encountered upon both children and adults, especially the latter in my experience, and may occur at any period of life.

Etiology.—The causes of the disease are to be found in all those influences which tend to lower the tone of general health. It is rarely seen in the upper walks of life, except in children following depressing general diseases.¹ It is seldom seen in a marked form outside of dispensary and hospital practice. It almost invariably manifests itself in those who are poorly nourished, overworked, in depraved health, and improperly cared for as regards food and hygiene. It is most frequently met with in prisons, poor-houses, and tenement-houses, and among those who live in squalor and poverty and in depressing surroundings. Improper and insufficient diet, alcoholism, want of ventilation, mental or excessive physical work, bad hygiene, and uncleanliness are all causes which may call forth the disease. In those predisposed to the eruption, a condition acquired through an existence amid the vitiating influences mentioned, or through such general diseases as diabetes, syphilis, and serofulosis, it may be produced also by various external agencies or irritants. It is contagious, but not to the degree of impetigo contagiosa, and is readily auto-inoculable, even through several generations of cultures, as proved by the experiments of Vidal.²

Pathology.—Ecthyma is a retrogressive disease. It manifests necrotic changes, in most cases slight and limited, but in others, as in the gangrenous variety, marked. It may occur as a primary affection, arising from certain depraved or cachectic states of the system, induced by chronic diseases, grave fevers, syphilis, alcoholism, debility, and especially insufficient or improper food and bad hygienic conditions. In such subjects it may exist as a secondary disease. Thus, it is frequently encountered in a modified form as an accidental affection, the result of local irritation from such causes as scratching, pediculi, and other parasites.

¹ A portrait showing distinct, sharply defined, rounded, punched-out-looking erythematous, gangrenous ulcers, disseminated and in patch form, occurring in a child, is depicted in Neumann's *Atlas of Skin Diseases*, with the title "*Impetigo, Ecthyma Cachecticorum.*" *Atlas*, Lief. iii. Taf. xxi.

² *Annales de Derm. et de Syph.*, t. ix. No. 5.



ECTHYMA.

The disease exists in a middle-aged man, much reduced in health through improper food and unfavorable hygienic surroundings. The lesions are flat pustules with inflammatory, radiating areolæ and brownish crusts. Recovery rapid under good food and a weak sulphur paste. (The AUTHOR's case, from a water-color drawing.)



ECTHYMA.

ACUTE, DEEP-SEATED, ULCERATIVE OR GANGRENOUS VARIETY.

The subject is a child three years of age, in apparently good general health. The process began as a flat pustule, was acute, ulcerated rapidly, and simulated an ulcerative chancre or syphilitic lesion. The ulcer was wedge-shaped, over a half-inch in depth, and covered with a yellowish pseudo-membrane. Duration of disease two weeks at date of photograph. Recovery occurred in three weeks under *lotio nigra*. A scar followed the ulcer. This variety of ecthyma is met with chiefly in infants, and is rare. It is allied to, or identical with, the gangrenous lesions which may follow variella and measles. (Dr. JAY F. SCHAMBERG'S case. Seen by the AUTHOR.)

In these cases it is usually a complicated affection as regards its clinical features as well as its intimate pathology and bacteriology. The lesions are often anomalous, being both ecthymatous and impetiginous. They are hybrid, and difficult to classify. To the same group of lesions belong those produced locally by such drugs as arsenic, tartar emetic, and the like. The form of the local manifestation is similar in either case,—that is to say, it is ecthyma,—but the peculiarities of the lesions and their significance as throwing light on the disposing causes of the disease are points which must be duly considered, and upon which success in treatment may depend. The microbes which produce the local mischief may be the same for ecthyma, impetigo simplex, and impetigo contagiosa. This, however, is not, in my opinion, sufficient reason for regarding these distinct clinical affections as one and the same disease, as some authors insist. Etiological factors alone, *per se*, do not in every instance constitute diseases. The existence of something besides the so-called cause is generally required to produce what is known as a “disease.” There are, of course, many and notable exceptions to this statement, as, for example, scabies and the like. Clinical forms, where they are sufficiently distinctive to be recognized and defined by the clinician, should always be preserved as landmarks for study and investigation of disease.¹

Ecthyma is a disease *sui generis*. It illustrates a distinct morbid type. It is more closely allied to impetigo than to any other disease, but differs from it in important particulars clinically and pathologically. It is inoculable and auto-inoculable. Upon these points Vidal and Leloir have made interesting experiments. Inoculation with the pus always produces ecthyma, and, according to Leloir,² through five successive generations. The power to reproduce diminishes gradually with each reinoculation, ceasing at the fifth or sixth.

The structure and the mode of formation of the lesion of ecthyma have been carefully studied in its several stages of evolution, from the macule to the complete pustule, by Leloir. The formation of the pustule begins in the prickle and granular layers, with the “*altération cavitaire*” of Leloir, which, as Unna³ explains this term, consists in the expansion of the perinuclear zone of the epithelial cell and the formation of intercellular elementary vesicles, which run together into larger cavities and spaces by rupture of the cell-walls, become filled with fibrinous fluid and pus, and finally form epidermic abscesses. The papillæ

¹ The disease has received special study from Besnier (translation of Kaposi), and from Leloir and Vidal, to be referred to. In this connection may be consulted an essay by Muselier (“*Étude sur la valeur sémiologique de l’Ecthyma*,” Paris, 1876), who takes up the several forms of the disease and discusses especially their clinical importance.

² *Traité descriptif des Maladies de la Peau*, par Leloir et Vidal. Paris, 1889.

³ *Op. cit.*, p. 251.

beneath the pustules are densely infiltrated with leucocytes ; in the centre of the pustule they are flat and broad, and at the periphery elongated and enlarged. In three cases of hemorrhagic ecthyma Leloir recognized in the vessels of the skin endarteritis and endocapillaritis, and in four cases of ulcerative ecthyma necrosis of the papillæ and superficial strata of the corium. The microbes of suppuration are naturally present in abundance, especially staphylococci and streptococci, and in some cases bacilli. Cultures from ecthyma pus in Leloir's hands produced staphylococci and streptococci, which, however, when inoculated gave variable results.

According to Unna's investigations, the ecthyma pustule differs in important particulars from that of staphylogenic impetigo, "in that sub-cornical suppuration (an epidermic abscess) is not directly developed, but the suppuration appears secondary to a characteristic inflammation of the epidermis, which is at its centre purely fibrinous and at its periphery very œdematous in character." Thus the ecthyma pustule has a certain resemblance to that of variola, in which also epidermic degeneration precedes suppuration. The collection of pus in ecthyma is not sub-corneal, but sub-epithelial, and extends into the corium. The crust contains a large amount of fibrin, and includes all the layers of epidermis. It differs from that of impetigo, which consists of the corneous layer only and of dried-up pus. At the same time the subject should be studied in connection with simple impetigo, and especially with dermatitis from scratching and other forms of traumatism, and with local puriform infections in general.

Diagnosis.—Ecthyma simplex may be confounded with eczema pustulosum, impetigo simplex, impetigo contagiosa, impetigo herpetiformis, dermatitis herpetiformis, and the large, flat, pustular syphiloderm and scrofuloderm. It may be known from eczema by the size and form of its pustules, as well as by the fact that they occur, as a rule, discretely. The inflammatory, firm base, with extended areola ; the large, flat pustule ; its course ; the excoriation, and the brownish or blackish crust, will further serve to distinguish it from this disease. It may be known from impetigo simplex by the character of the pustules and crusts, and from impetigo contagiosa by the character of the lesion, the color and appearance of the crust, the regions involved, and the general condition of the patient. In rare and severe forms of the disease, such as I have seen occasionally, where pustulation advances in an annular, creeping form beyond the crust, it may, so far as the lesions are concerned, resemble impetigo herpetiformis, but the history, the course of the pustules, and the grouping in the latter disease will aid in the diagnosis.

Ecthyma simplex may closely resemble the large, flat, pustular syphiloderm,¹ with which it is especially liable to be confounded. Its course,

¹ I have found this to be particularly the case in the colored race, in whom the areola and the color of the eruption are wanting.

however, is different, developing more rapidly, and usually terminating in a few weeks. There are, moreover, more heat and pain, together with other signs of inflammatory disturbance, about simple ecthyma than about syphilis. The characters of the bases of the pustules are sufficient to distinguish the two forms of disease: in ecthyma simplex the erosion is superficial; in syphilis there is ulceration, the edges are abrupt and more or less deep, and the excavation may be covered with a thick, yellowish, puriform fluid. The crusts of ecthyma are brownish in color; in syphilis they generally have a dark-greenish tint. In ecthyma they are less bulky than in syphilis, and do not tend to heap up into layers. If the disease be syphilis, other symptoms will generally be present, which will further aid in establishing the diagnosis. In scrofulosis there may also occur here and there large flat pustules, which usually form indolently and insidiously, without much inflammatory areola, and slowly crust over, leaving notable flat, depressed, glazed scars.

Treatment.—The disease, as a rule, yields readily to the proper remedies. All means should be adopted for the purpose of reinstating good health. The diet is of great importance, and should consist of the most nutritious food. The hygienic surroundings should be inquired into; cleanliness, bathing, fresh air, exercise, proper rest, should all demand attention. It is to be remembered that the disease is one usually caused by debility of one form or another. Tonics, such as iron, arsenic, quinine, strychnine, and the mineral acids, are often of value. The local treatment is of the utmost importance. Alkaline and antiseptic baths and lotions are to be employed. Crusts are to be removed by antiseptic starch poultices, or carbolic acid or corrosive sublimate water dressings, and a mildly stimulating ointment, as the following, applied:

R Acidi Borici, ℥ss;
 Acidi Carbolici, gr. x;
 Hydrargyri Ammoniaci, gr. x;
 Ungt. Zinci Ox. Benz., ℥i.
 M. Ft. ungt.

A lotion of corrosive sublimate, from one-quarter to one grain to the ounce, sulphurous acid or sodium hyposulphite in the form of a lotion, iodoform, aristol, naphthol, acetanilid, in powder or ointment form, are all useful. The skin is weak and debilitated, and strong, stimulating applications prove injurious. If the disposition to recovery be sluggish, the sores may be touched with solution of nitrate of silver, of carbolic acid, or of chlorinated soda. Attention should be directed to the possible presence of animal parasites. Scratching should be interdicted.

Prognosis.—This is favorable in the common variety. A few weeks usually suffice to restore the patient to health, provided a change of the condition and surroundings can be obtained and the treatment carried out.

IMPETIGO HERPETIFORMIS.

IMPETIGO HERPETIFORMIS IS A PUSTULAR DISEASE, COMPOSED OF MILIARY OR SMALL PUSTULES ARRANGED USUALLY IN CLUSTERS OR IN ANNULAR GROUPS ON AN INFLAMED BASE, TENDING TO BECOME CONFLUENT AND CRUSTED, ACCOMPANIED BY CONSTITUTIONAL SYMPTOMS, OCCURRING USUALLY IN PUERPERAL WOMEN, AND GENERALLY FATAL.

Symptoms.—Under this name F. Hebra¹ described a rare and grave form of skin disease of which at that time he had seen but five examples, four of which terminated fatally. It is characterized by distinct pustules, arranged in groups or in an annular form, which tend to run together and to dry into yellowish, greenish, or brownish crusts, beneath which there exists a red, moist, excoriated, non-ulcerating surface, similar to that of eczema madidans. On the periphery of these patches new groups and rings of pustules manifest themselves. The course of the disease was similar in each case. The anterior surface of the trunk and the flexor surfaces of the thighs, especially the genito-crural region, were the chief seats of the lesions, but other regions, as the upper extremities, legs, neck, and back, and even the face, were invaded. Each outbreak of pustules was preceded by malaise, chills, rigors, fever, and general systemic disturbance.

Since the foregoing description by Hebra was written, many years ago, Kaposi² has added to our knowledge of the subject. Thus the following definition by this writer describes the disease more sharply: "It is invariably characterized by superficial miliary pustules, which begin as such and remain unchanged throughout their entire course, always arranged in groups and clusters, new lesions appearing on the border of older and crusted confluent pustules, in one or more series, on inflamed bases, while recovery takes place in the centre: furthermore, the disease occurs only in puerperal or pregnant women, is accompanied by chills and marked fever, and is almost invariably fatal." It is characteristic of the disease that the lesions begin as pustules. It is, therefore, when typical, strictly pustular. The pustules are not, however, in all cases arranged in circinate form, but may be irregularly clustered, or even disseminated, as in a fatal case of Dr. Hartzell's, occurring in an old lady between seventy and eighty, which I had the opportunity of examining.

That the disease, however, is not always so sharply defined in its features as described by Kaposi, may be surmised from the descriptions of the same disease given by other observers in Vienna, where the disease has been most frequently noted. At times it is more poly-

¹ Wien. Med. Wochensch., No. 48, 1872; also Lancet, March 23, 1872. See also Atlas der Hautkrankheiten, Heft ix., Tafeln ix. und x. Wien, 1876.

² Arch. f. Derm. u. Syph., 1887, p. 273.



IMPETIGO HERPETIFORMIS.

The disease, occurring in a pregnant woman, shows widely distributed, grouped, in places circinate, small and minute pustules over the trunk and thighs, which tend to spread on the periphery and to crust in the centre of the patch. (After F. HEBRA, *Atlas der Hautkrankheiten*.)



IMPETIGO HERPETIFORMIS.

The disease is in an advanced stage, as shown by the extensive patches of confluent pustules and the abundant thick sheets of crusts over the thighs like a shield. The circinately arranged, miliary sized pustules, spreading on the periphery and crusting in the centre, constitute a conspicuous feature. (After F. HEBRA, *Atlas der Hautkrankheiten*.)

morphous. Thus, to give an idea of the multiformity which the disease is capable of assuming, it may be stated that genuine cases have been described under the names of "herpes impetiginiformis" (Hebra), "herpes vegetans" (Auspitz¹), "herpes pyæmius" and "herpes puerperalis" (Neumann²), while Baerensprung,³ who was the first to describe and figure the disease, designated it as a peculiar form of "herpes circinatus." Up to within a few years past thirteen cases had been recorded in Vienna, all except one (a man aged twenty, with marasmus) occurring in women during the latter months of pregnancy, and, with a few exceptions, terminating fatally.

As the disease progresses, the crusts fall off, the skin beneath being red and covered with a new epidermis, or this may be wanting, the skin exuding fluid as in eczema, showing infiltration or a raw surface with bare papillæ, but ulceration seldom occurs. Finally, at the end of several months, almost the entire surface of the skin may be invaded, when it is usually swollen, hot, covered with greenish, brownish, blackish crusts, showing fissured or excoriated areas, surrounding which here and there are still circles of pustules. Thickened, raised plaques of skin, looking like excoriated broad condylomata, resembling those of pemphigus vegetans, may be present (Auspitz, Du Mesnil). The mucous membrane of the tongue, mouth, pharynx, and even the œsophagus, in some cases also shows evidence of the disease in the form of circumscribed, grayish patches, depressed in the centre, and groups of pustules or small ulcerative points. The disease is always accompanied by notable changes in the general health. There is fever with elevation of temperature, and intercurrent chills announce each new outbreak of pustules, while dryness of the tongue, vomiting, diarrhœa, albuminuria, and delirium are frequently present.

The disease is infrequent. Dubreuilh⁴ has analyzed all the authentic cases, seventeen in number, that have been reported, almost all of which were observed in Austria and Germany. In Great Britain, according to Crocker, it is of very rare occurrence, and the same may be said for the United States. A case is recorded by Th. Du Mesnil and Marx,⁵ of Würzburg, occurring in a woman, thirty-five years of age, and possessing all the characteristic features of the disease, the interesting point being that it occurred independently of pregnancy. In the course of the disease chills, heart palpitations, vomiting, and nystagmus occurred, and upon excoriated places on her skin as well as in the mouth papillary excrescences formed. It began about the genitalia and gradually invaded the whole body. Still another example is recorded by Th.

¹ Archiv für Derm. u. Syph., 1869, p. 246.

² Lehrbuch der Hautkrankheiten. Wien, 1873, p. 173.

³ Atlas der Hautkrankheiten, Hebra und Baerensprung, Tafel viii. Erlangen, 1867.

⁴ Annales de Derm. et de Syph., April, 1892.

⁵ Archiv für Derm. u. Syph., 1889, No. 5, p. 567.

Du Mesnil,¹ and one by Dubreuilh,² the first ending in recovery, the latter fatally. Dauber³ records a case in which four recurrences took place, the last, accompanied by a rapid tuberculosis of the lungs and larynx, being fatal. The cutaneous eruption receded more and more as the strength of the patient decreased, until at her death, one and a half years after the fourth recurrence of the eruption, nothing but pigmentation and a few ulcers on the mucous membrane remained. Maret⁴ records a case in which, after four months, recovery took place; and Schultze⁵ an instance in which the disease occurred in the seventh and again in the ninth pregnancy, the mucous membranes as well as the skin being invaded. The mucous membranes were likewise involved in a case reported by Breier.⁶

Cases have been reported with this name which, however, do not seem to represent the disease, but rather allied forms. Thus, a case occurring in a man, aged eighteen, has been reported by Pataky,⁷ which Kaposi regards as an example of erythema multiforme vesiculosum. The disease, in the author's opinion, was probably dermatitis herpetiformis. Schwarz⁸ has also reported a case under the name of impetigo herpetiformis Hebra, which (as Dubreuilh states) is to be viewed rather as a pemphigus. Zeissler⁹ records a case having some of the symptoms of impetigo herpetiformis, but the features seem to be more like those of pemphigus vegetans. C. Heitzmann's¹⁰ case appears to be a connecting link between Hebra's disease and pemphigus, possessing more of the characters of the latter disease.

As allied to impetigo herpetiformis, the case of Hallopeau,¹¹ described as "*nouvelle forme de dermatite pustuleuse chronique en foyers, à progression excentrique*," may be cited. It was regarded as a chronic form of pyogenic infection limited to the integument. Feulard at the same Congress showed another case having the same features. There were many points in common with impetigo herpetiformis.

Pathology.—The pathological anatomy of the skin has been studied by Th. Du Mesnil and Marx and by Dubreuilh, the former observers taking sections from the living subject. Throughout the erythematous zone subjacent to the pustules the blood- and lymph-vessels were dilated,

¹ Archiv für Derm. u. Syph., 1891, p. 723.

² Annales de Derm. et de Syph., April, 1892, p. 374.

³ Archiv für Derm. u. Syph., Bd. xxviii., Heft 2, No. 3.

⁴ Ueber die impetigo herpetiformis Hebra's. Thèse de Strassburg, 1887.

⁵ Archiv für Derm. u. Syph., Bd. xxx., 1, 1895.

⁶ Derm. Zeitschr., 1894, p. 199.

⁷ Wiener Med. Blätter, 1886, No. 20.

⁸ Wiener Med. Blätter, 1886, No. 22.

⁹ Monatsh. f. prakt. Derm., 1887, p. 950.

¹⁰ Archives of Derm., Jan. 1878.

¹¹ Compte rendu officiel du Congrès International de Dermatologie et de Syphilographie de 1889. Paris, 1890.

with swollen endothelium, and were surrounded by embryonic cells. This infiltration was especially localized in the upper strata of the corium, and particularly at the base of the pustules, where the structure of the derma was indistinguishable, the cells even filling up the mucous layer to the extent of masking the boundary line between it and the corium. In the pustules cocci, sometimes isolated and in other instances between the leucocytes, were present. In one of Du Mesnil's cases, in the condylomatous growths there was found notable acanthosis of the interpapillary but not of the supra-papillary prickle layer. Kaposi found in the contents of the pustules cocci, bacteria, and vibriones, but they were not regarded as pathognomonic. Their presence in such cases, however, points to the disease being of an infectious nature, and there is much in the history, symptoms, and course in favor of this view. In some cases it is without question due to septicæmic poisoning. Autopsies in some cases have shown nephritis, in others endometritis purulenta and septicæmia, tuberculous lesions of the lungs and of the intestines, tubercular peritonitis, and syringomyelia, while in other cases no sufficient cause of death was found. Unna¹ thinks it probable, in view of the usual septic termination of the disease, that the infectious microbes are carried from the skin into the circulation; but this does not, in the author's opinion, explain the original septic infection which may precede the eruption.

Diagnosis.—Marked cases should offer no difficulty, for the symptoms are peculiar and striking, but, as has been pointed out, ill-defined and anomalous cases are occasionally met with which resemble both pemphigus and dermatitis herpetiformis especially, and which may be very difficult to distinguish from these diseases. On this point, however, allowance must be made for transitional forms, which, as the literature of the subject shows, are not rare. For points concerning differential diagnosis the reader is referred to pemphigus and to dermatitis herpetiformis.

Treatment.—There is little to be said that is encouraging. Each case should be managed with the view of removing or modifying the exciting cause, whatever this may seem to be. The possible existence of septicæmia must always be taken into consideration in the treatment. The remedies useful in pustular dermatitis herpetiformis and in pemphigus may be employed, according to the case. Inasmuch as the cutaneous manifestations may be regarded in most if not in all cases as the expression of a general infection, the remedies should be selected with this idea in view. Attention in particular should be directed towards elimination by the kidneys.

The prognosis is grave. Most of the reported cases have proved fatal.

¹ Op. cit. (English trans.), p. 259.

DERMATITIS HERPETIFORMIS.

DERMATITIS HERPETIFORMIS IS AN INFLAMMATORY, SUPERFICIALLY SEATED, MULTIFORM, HERPETIFORM ERUPTION, CHARACTERIZED MAINLY BY ERYTHEMATOUS, VESICULAR, PUSTULAR, AND BULLOUS LESIONS, OCCURRING USUALLY IN VARIED COMBINATIONS, ACCOMPANIED BY BURNING AND ITCHING, PURSUING USUALLY A CHRONIC COURSE, WITH A TENDENCY TO RELAPSE AND TO RECUR.

Symptoms.—In severe cases ill-defined or distinct prodromata usually precede the outbreak, consisting of malaise, constipation, febrile disturbance, especially chilliness, and heat, or alternate hot and cold sensations. Itching may also be present for several days before the eruption appears. The latter may be gradual or sudden in its development. Not infrequently it is sudden, one or another form of eutaneous manifestation appearing over considerable surface diffusely or in patches in the course of a few days, accompanied by burning and itching. A single variety of the disease, as the erythematous or the vesicular, may appear, or several varieties may exist simultaneously, constituting in consequence notable multiformity. There is, moreover, in almost all cases a distinct disposition for one variety, sooner or later, to pass into some other variety; thus, for the vesicular to become bullous or pustular, or *vice versa*. This change of type may take place during the course of an attack or on the occasion of a relapse or a recurrence; or, as is often the case, it may not show itself until months or years afterwards. Not infrequently in a given case during a period of from one to five years the erythematous, vesicular, pustular, and bullous varieties will all in turn manifest themselves as distinct forms of disease. While there is usually more or less multiformity of lesions, this is not always the case, as sometimes the eruption may be vesicular or pustular throughout its course during an attack, and possibly may show the same form in the next and in subsequent recurrences. Irregularity in the development of lesions is also notable, at one time vesicles being first to appear, at another blebs or erythema. The multiform and herpetiform features are characteristic of the disease, and I would lay special stress on the latter point.¹ The eruption, as a whole, varies as regards extent and severity, but in most cases it covers at one time or another considerable surface, and is pronounced. Burning, itching, or pricking sensations may be said to exist always, and in the majority of cases are intense, especially just prior to an outbreak of lesions. Sometimes these symptoms abate considerably with the rupture or laceration of the lesions.

¹ Some writers, as Piffard and J. C. White, consider the name "dermatitis multiformis" more appropriate than dermatitis herpetiformis; but as the term "multiformis" is broad and vague, and as "herpetiformis" expresses the most prominent feature of the disease, it seems best to preserve the original name. Without herpetiformity, it may be said, the disease cannot exist.



DERMATITIS HERPETIFORMIS.

ACUTE, ERYTHEMATO-VESICULAR VARIETY.

The anterior aspect of the trunk of a woman aged forty-five is portrayed, illustrating an early stage of this variety of the disease. Duration six days. Minute and small vesicles, as well as a few blebs, exist profusely almost everywhere over the affected regions, some upon erythematous lesions, others springing from non-inflamed skin. The clustered, herpetiform element is notable in some localities, especially around the umbilicus and in the axilla. (The Author's case, in the University Hospital.)



DERMATITIS HERPETIFORMIS.

ACUTE, ERYTHEMATO-VESICULAR AND PUSTULAR VARIETIES IN COMBINATION.

The anterior aspect of the trunk, especially the abdomen, in a middle-aged woman, is involved. The disease was generalized over the greater part of the cutaneous surface, and was of fourteen days' duration. (The AUTHOR's case.)

The common varieties of the disease are the erythematous, vesicular, bullous, pustular, and multiform.¹

ERYTHEMATOUS VARIETY.—This manifests itself in patches or as a diffuse efflorescence, as in erythema multiforme or the polymorphous exudative erythemata. An urticarial element may also prevail, the skin showing a disposition to take on acute œdematous infiltration in a diffuse form. An urticarial complication rather than an urticaria is suggested by the condition of the inflamed skin. But in the majority of cases the resemblance is much more like erythema multiforme of the usual type, the patches, whether discrete or confluent, not infrequently showing irregular, more or less defined, marginate outlines or borders.² The color is usually a raspberry red, mottled and tinged with yellowish, brownish, or variegated hues, especially as the eruption grows older, with a variable degree of pigmentation. Maculo-papules, circumscribed or diffuse flat infiltrations of variable size and shape, and papulo-vesicles may also exist. In this form of the disease there is frequently considerable general disturbance, especially chilliness and heat, and the burning and itching are marked.

VESICULAR VARIETY.—This is the variety most frequently encountered. It is marked by small pin-head to pea-sized, flat or raised, irregularly shaped or stellate, glistening, pale-yellowish or pearly, translucent, usually firm or tensely distended vesicles, frequently without areolæ. In their early stages they cannot usually be seen without difficulty, an oblique light often being required to show their existence. In size and shape they vary extremely, and their distribution is irregular, being disseminated more or less profusely over a given region, and aggregated into small clusters or groups of two, three, or more. When close together they tend to coalesce, as occurs under the same conditions in herpes zoster, forming multilocular vesicles or small blebs, in which event an areola exists, and at this stage the little group will generally present a puckered or drawn-up appearance, indicative of its herpetic nature. Itching is usually severe and often is intense, being altogether disproportionate to the amount of eruption. It persists, but abates more or less, often markedly, with rupture of the lesions. The latter usually appear gradually, requiring from three to six or eight days for their complete development. Notwithstanding that scratching is indulged in, excoriations are not produced to any great extent,—much less than in eczema. The vesicles when pricked open or ruptured by scratching incline to refill immediately, and have firm walls, as in herpes simplex.

¹ Most of the author's articles on the subject of Dermatitis Herpetiformis may be found in collected form in "Selected Monographs on Dermatology," published by the New Sydenham Society. London, 1893. Portraits in color representing the vesicular variety of the disease may be found in Jamieson's Treatise and in Crocker's Atlas. The latter author describes the disease under the name "hydra herpetiforme."

² See a case illustrating this variety, by the author, in the Med. Record, April 2, 1887.

BULLOUS VARIETY.—The lesions are more or less typical blebs, tense or flaccid, usually the former, flat or semiglobular, sometimes without areolæ. They vary in size, are for the most part irregular or angular in outline, and incline to group in clusters of two, three, or four, the skin around and between them being reddish and puckered. The herpetiform element exists here as in the vesicular variety, but to a less degree. Not infrequently in immediate proximity, minute or small, pin-head-sized, whitish, distinct pustules will form. This I have repeatedly noted. Often vesicles of all sizes, flat and raised, as in the vesicular variety, will form very near by, or, it may be, at a distance. Itching and burning may be severe, especially when erythema and vesicles coexist.

PUSTULAR VARIETY.—This is generally less clearly defined than the vesicular variety. In typical cases the pustules are acuminate, rounded or flat, tense or flaccid, usually the former, and vary in size from a pin-point to a pea. Sometimes they are extremely small and resemble the miliary pustules of impetigo herpetiformis. They are pustular in character from the beginning. Two distinct kinds of pustules occur. The smallest lesions are generally entirely flat, on a level with the surrounding skin, and frequently not larger than a pin-point or pin-head, being miliary. The larger pustules are of a different character, being elevated, rounded or acuminate, and surrounded by an inflammatory areola. Sometimes they are seated on a slightly raised base, and when fully matured present a puckered appearance, from the fact that the lesion is often angular or irregularly shaped, as is the case in the vesicles of herpes zoster. They incline to form in groups of two, three, or four. A central pustule or a group of pustules will sometimes be closely surrounded by a variable number of smaller, usually flat pustules, in some cases in a partly circinate form. In other cases, however, this peculiarity does not exist, the lesions being discrete and even disseminated. The pustules are often distinctly whitish in color, and they may be complicated with slight hemorrhage, as occurs in herpes zoster. They generally itch and burn, in some cases these symptoms preceding the eruption for several days. The larger pustules pursue a slow course, from one to two weeks usually being required for their full development, but in other cases they mature more rapidly. Sometimes, together with the pustules, vesicles and blebs occur, and generally in close proximity to the pustules.

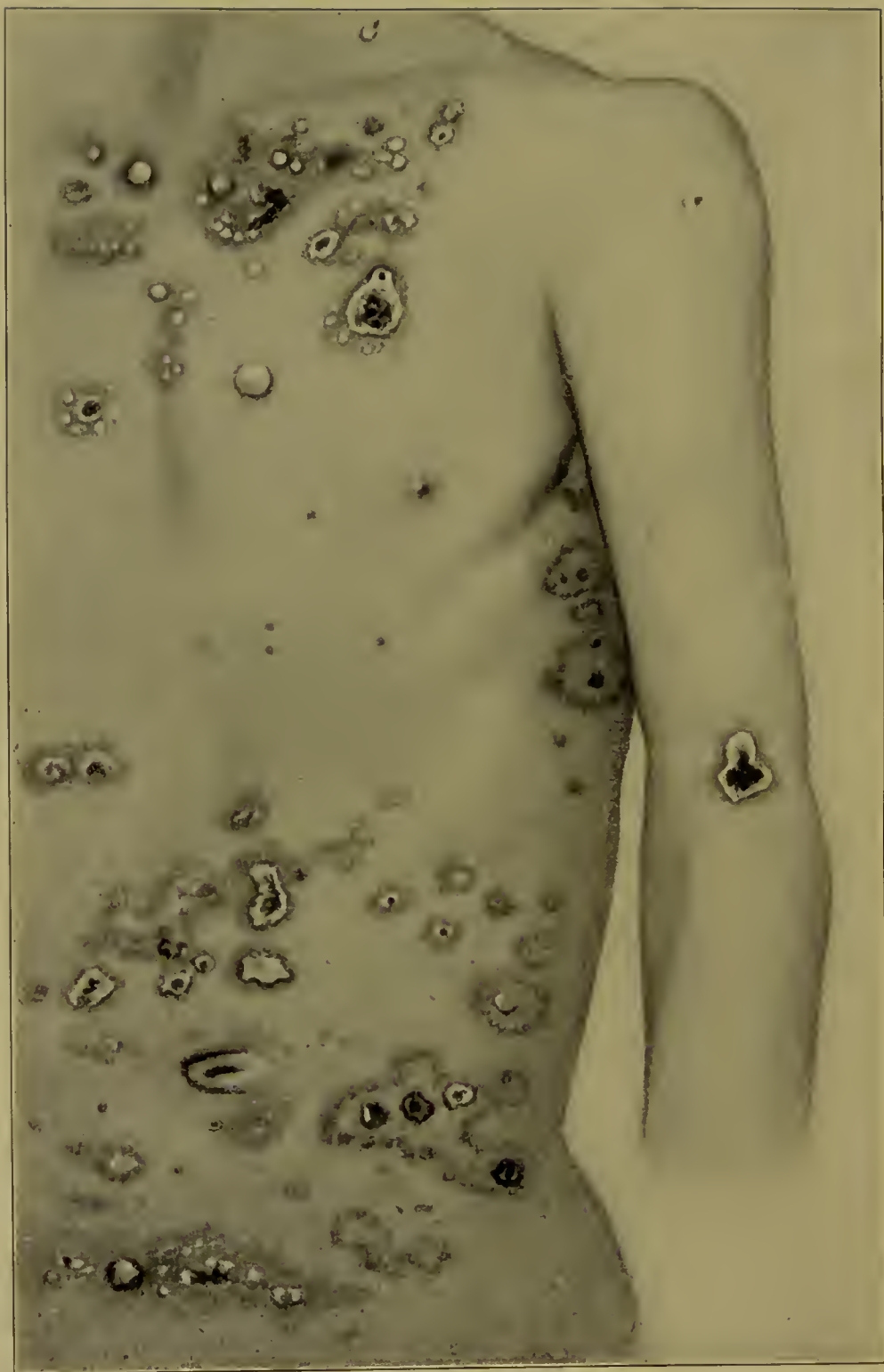
This variety of the disease at times, however, is uncomplicated, in which case it is entirely pustular from the beginning to the end of the attack. This may last three or four weeks, when generally a respite of from one to six weeks occurs, to be followed by another, slight or severe, pustular outbreak. In this manner the disease may be kept up indefinitely. The pustular variety is not so apt to alternate with other varieties of the disease as are the erythematous, vesicular, and bullous. It tends to repeat itself in the same form.



DERMATITIS HERPETIFORMIS.

VESICO-BULLOUS VARIETY.

The disease occupies both arms of a woman symmetrically, as well as the rest of the general surface, and is characterized by herpetiform vesico-bullous lesions, the larger ones resembling those of erythema multiforme bullosum. Angular, elongate, and stellate, drawn-up or puckered vesicles are also observed. Duration two weeks. (The Author's case.)



DERMATITIS HERPETIFORMIS.

VESICO-BULLOUS VARIETY.

The subject is a boy, ten years of age. The disease of the skin began two months before, with blebs on the ankles. The trunk and thighs are now chiefly invaded. The vesicles incline to extend peripherally and in places to form circinate patches. The disease disappeared under full doses of arsenic, but in four months reappeared in the same form as before. (Dr. A. R. ROBINSON'S case, from a water-color drawing.)

PAPULAR VARIETY.—A papular manifestation occasionally appears, but when it occurs it tends to become rather papulo-vesicular in character, resembling abortive herpes. Lesions of this kind must be distinguished from the more acute maculo-papules, resembling those of erythema multiforme papulosum, met with in the erythematous variety, from which they differ in many particulars. It is the mildest expression of the disease; in a marked form it is rare; and, in my experience, it is seldom extensively developed.

MULTIFORM VARIETY.—This variety is distinctly polymorphous, and is often remarkable for the numerous forms and combinations of lesions that exist. It consists of several or of all of the varieties in combination, constituting a distinctly multiform manifestation, composed of usually bright or red dusky erythematous patches or a more or less general erythema involving the greater part of the surface, as in the case of a wide-spread erythema multiforme. In addition, there are maculo-papules; urticarial lesions and patches; flat papulo-vesicles and flat infiltrations of the same general character; vesicles, blebs, and pustules (and, rarely, peculiar gelatinous lesions),¹ of all sizes and forms, and in all stages of evolution; together with excoriations and pigmentation of a dusky-red or brownish color. In several vesico-bullous and bullous cases I have noted a disposition for some of the lesions to explode on pressure with a cracking sound; in one case for the gelatinous contents to be forcibly extruded or to pop out.² The lesions are capricious, coming and going and changing their type from time to time. This mingling of the several varieties of lesions is a distinctive feature of the disease, and hence for clinical purposes (as in the case of eczema rubrum and erythema multiforme) it is convenient to make a multiform variety.

The course of the disease is variable, but in almost all cases is chronic, often lasting either constantly or in the form of relapses and recurrences for years. Two cases have been reported by the author³ in which the disease had existed and had been under his observation respectively eleven and thirteen years, and many other cases have been observed by him, as well as by others, in which the course was eminently chronic, with a marked tendency to relapse and to recur. The disease is remarkably rebellious to treatment.⁴ Typical expressions of the disease, illustrating the common forms, are found in three cases reported by the

¹ See a case reported by me in *Med. News*, March 7, 1885.

² *Med. News*, March 7, 1885, and *Amer. Jour. Med. Sci.*, Jan. 1885.

³ *Phila. Med. Times*, July 12, 1884, and *N.Y. Med. Jour.*, Nov. 15, 1884.

⁴ Certain forms of the disease have been described as "hydra," especially by Bazin in his works as "*Hydra bulleux*" and "*Pemphigus à petites bulles*;" also by Tilbury Fox (a clinical study on *Hydra*, *Archives of Derm.*, 1880, p. 16), who admits three varieties: first, *hydra simplex*, which corresponds to the *herpes iris* of Willan and Bateman and to the *hydra vésiculeux* of Bazin; second, *hydra herpetiforme*; third, *hydra pruriginosum*, which is the same disease as the *pemphigus pruriginosus* of Willan and Bateman and the "*pemphigus à petites bulles*" or "*hydra bulleux*" of

author.¹ Brocq,² who was the first French writer to study the disease carefully, gives valuable information concerning it from a clinical, etiological, and diagnostic stand-point.

Etiology.—It occurs in both sexes, and at all ages, but generally after adult life has been reached, and particularly between the ages of thirty and sixty. Arning,³ however, reports a case occurring in a boy six years of age. It is met with in persons apparently in average general health, but much more frequently in those whose nervous systems, from manifest or obscure causes, are obviously affected. The nervous system as a governing centre controlling cutaneous changes is plainly at fault in most, if not all, cases, as clinical history shows, for example, in cases which are directly traceable to mental strain, emotion, and nervous shock, physical or mental, as reported by the author,⁴ by Elliot,⁵ and by others. Other instances of the kind, due to anger and fright, are recorded by Devergie, Crocker, Vidal, Tenneson, and Brocq,⁶ so that it becomes evident that severe shock of the nervous centres may, under favorable conditions, be directly the cause of the disease. The renal function is at times imperfectly performed, and in some cases nephritis exists, but whether as cause or as effect it is difficult to determine.

That pregnancy, the puerperal state, and irregular and disordered menstruation are not infrequently causes of dermatitis herpetiformis has been shown by numerous observers, including the author.⁷ Under the title of "herpes gestationis," numerous cases have been reported, which must be regarded as examples of the vesicular and bullous varieties of the disease under consideration, being peculiar and different from other cases of dermatitis herpetiformis only in the cause. To this point attention has been called by the author on several occasions.⁸ Cases of this kind have been reported by Milton,⁹ Bulkley,¹⁰ Liveing,¹¹ W. G.

Bazin. Other writers have employed hydroa to express the bullous eruption from iodide of potassium and the like. Thus it will be seen that the term has been somewhat vaguely used by authors to designate several diseases. It indicates merely that the disease is characterized by blebs, and hence, unless qualified by an adjective, it has no special meaning.

¹ N.Y. Med. Jour., April 9, 1887, and Amer. Jour. Med. Sci., June, 1890.

² Annales de Derm. et de Syph., 1888.

³ Deutsch. Med. Wochensch., No. 21, 1890.

⁴ A Case of Dermatitis Herpetiformis caused by Nervous Shock. Amer. Jour. Med. Sci., Jan. 1885.

⁵ Two Cases developing after Severe Mental Emotion and Shock. Jour. Cut. and Gen.-Urin. Dis., Sept. 1891.

⁶ Quoted by Brocq, loc. cit.

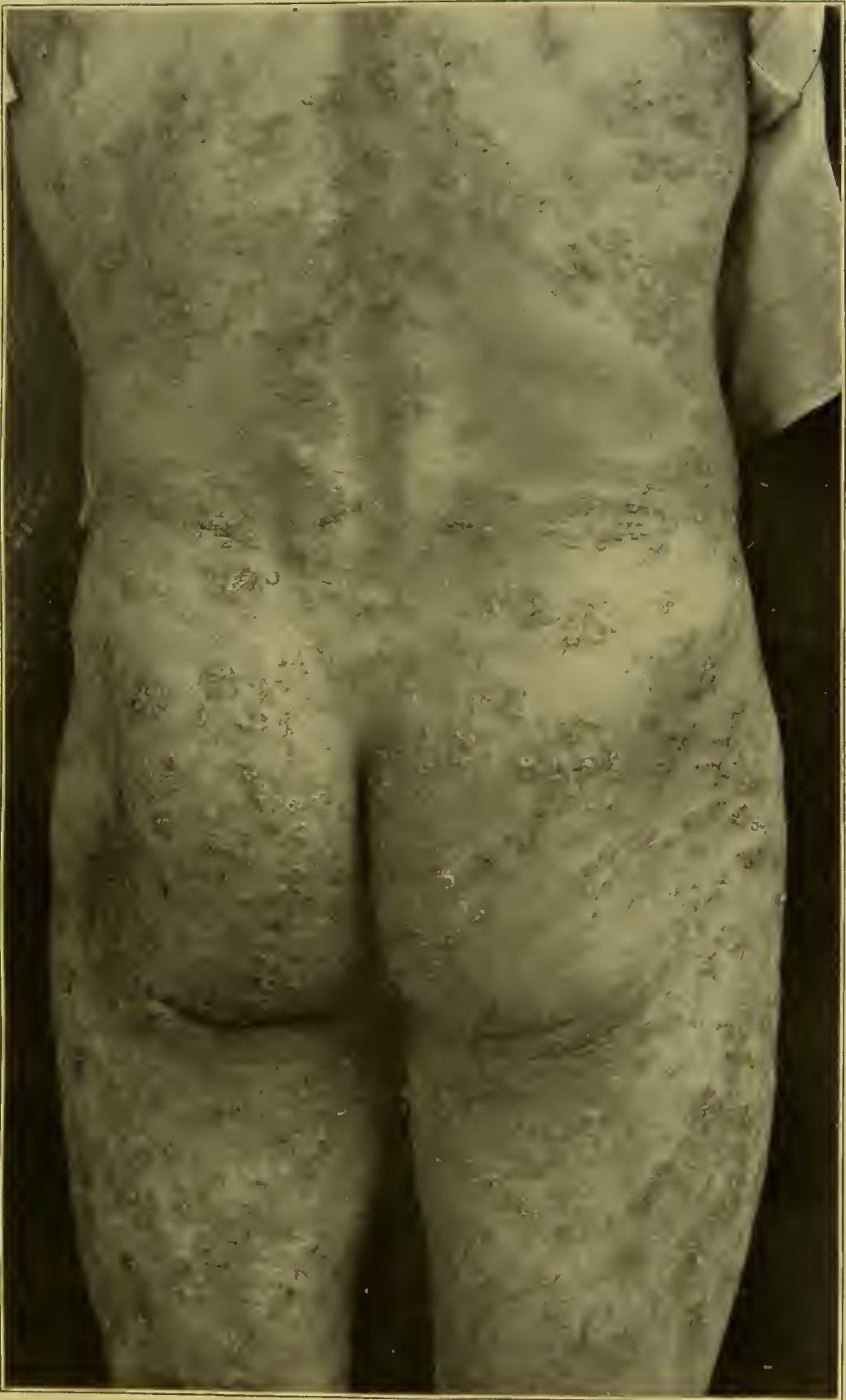
⁷ Med. News, July 19, 1884, and Nov. 22, 1884.

⁸ Med. News, Nov. 22, 1884.

⁹ Diseases of the Skin. London, 1872, p. 205.

¹⁰ Amer. Jour. of Obstet., Feb. 1874.

¹¹ Lancet, June 1, 1878, p. 783.



DERMATITIS HERPETIFORMIS.

CHRONIC, ERYTHEMATO-VESICULAR AND BULLOUS VARIETIES IN COMBINATION.

Variously sized and shaped pustules, vesicles, and blebs, occurring in ill-defined, occasionally circinate, groups and patches, exist over the general surface, almost universally. Erythematous patches, more or less marginate, are also present, from some of which vesicles and blebs arise. Duration fifteen months. A common, well-defined expression of the disease. (Dr. JAMES NEVINS HYDE's case.)



DERMATITIS HERPETIFORMIS.

CHRONIC, MULTIFORM VARIETY.

The disease is depicted upon the legs of an elderly woman, but the general surface is similarly invaded, though to a less extent. In addition to minute vesicles and pustules and blebs, there exist conspicuous excoriations and also pigmentation. The skin is considerably thickened from constant scratching. Duration one year, with a history of relapses and exacerbations. (Dr. GEORGE HENRY FOX's case.)

Smith,¹ and many others. They are, as I have endeavored to show elsewhere² (and as I still believe), examples of the vesicular and bullous forms of dermatitis herpetiformis, and should be grouped here rather than be regarded as representing a distinct disease. Perrin³ has arrived at the same conclusion, and thinks that pregnancy predisposes to it because of the disturbance it occasions in the function of the kidneys, the disease being due to a toxin in the blood, the nervous system being thus first affected, and afterwards the skin.

Occasionally the disease is due to infection from septicæmia, as may occur in the puerperal state, cases of which have been reported by Sherwell⁴ and others. A fatal case of the disease is reported under the title "Amenorrhœa, Septicæmia, and Dermatitis Multiformis" by H. F. Kerr,⁵ who considers that the septicæmia occurred as the result of the sudden suppression of the menstrual flow and absorption of septic matter. From these observations we may conclude that the disease is due to various causes, some of which are obscure in their origin and seat, but that the nervous system is directly responsible for the cutaneous manifestations.

Cases illustrative of the several varieties of the disease more or less modified, some mild in type, others severe, and due to various causes, have been reported by Stephen Mackenzie,⁶ Jamieson,⁷ Brocq,⁸ Haute-cœur,⁹ Unna,¹⁰ Blaschko,¹¹ Hebra,¹² Dubrenilh,¹³ Van Harlingen,¹⁴ Stelwagon,¹⁵ White,¹⁶ and others.

Pathology.—The pathological anatomy of the disease has been studied by G. T. Elliot,¹⁷ Leredde and Perrin,¹⁸ and T. C. Gilchrist.¹⁹ In the vesicular and bullous varieties, especially occurring during pregnancy ("herpes gestationis"), Leredde and Perrin observed that the

¹ *Dubl. Jour. Med. Sci.*, 1881, p. 70.

² *Med. News*, Nov. 22, 1884. "Preliminary Note on the Relation of Dermatitis Herpetiformis to Herpes Gestationis and other Similar Forms of Disease."

³ "Dermatose de Duhring au cours de la grossesse." Paris, 1895. See also *Annales de Derm. et de Syph.*, 1895, p. 936.

⁴ *Brit. Jour. of Derm.*, vol. ii. p. 54.

⁵ *Virg. Med. Monthly*, Jan. 1887.

⁶ *Brit. Jour. of Derm.*, Jan. 1893.

⁷ *Edinb. Med. Jour.*, Jan. 1891.

⁸ *Annales de Derm. et de Syph.*, 1888.

⁹ *Annales de Derm. et de Syph.*, 1890, abst. in *Lond. Med. Rec.*, Aug. 20, 1890. The differential diagnosis between this disease and impetigo herpetiformis is discussed.

¹⁰ *Monatsh. f. prakt. Derm.*, Bd. ix. No. 3.

¹¹ *Münch. Med. Woch.*, 1888, No. 51.

¹² *Monatsh. f. prakt. Derm.*, Bd. ix. (1889) p. 243.

¹³ *Jour. Cut. and Gen-Urin. Dis.*, 1889, p. 240.

¹⁴ *Phila. Polyclinie*, Oct. 1886.

¹⁵ *Jour. Cut. and Gen.-Urin. Dis.*, 1890, p. 50.

¹⁶ *Bost. Med. and Surg. Jour.*, March, 1889, under the title "Dermatitis Gestationis."

¹⁷ *New York Med. Jour.*, April 23, 1887.

¹⁸ *Annales de Derm. et de Syph.*, 1895, p. 451.

¹⁹ *Johns Hopkins Hosp. Rep.*, vol. i.

lesions of the corium were often confined largely to the papillary bodies. Diapedesis was sometimes very intense, and the migratory elements consisted chiefly of lymphocytes and eosinophilous cells, polynuclear cells being observed when the vesicles and blebs had matured, especially when suppuration occurred. Œdema was the second essential element noted in the corium, which at times was excessive, and was the result of a vaso-motor paralysis of the vessels of the corium. These observers regard the existence of migratory eosinophilous cells between the cells of the mucous layer as peculiar; as marking the importance of these elements in the disease; as showing the tendency of the skin to eliminate them in all possible ways; and as indicating a change in the blood which was constant in the cases studied by them.

T. C. Gilchrist's studies may be summarized as follows. Examination of an excised portion of skin taken from a typical erythematous and vesicular patch on the back of a man aged twenty-two showed the various changes from the beginning of the process up to vesiculation. The epidermis remained passive, except that in the mucous layer there were a number of vacuolated cells with shrunken nuclei and a few polynuclear leucocytes. The granular layer was still discernible, and nuclear figures were not more numerous than normal. The most striking changes were found in the upper part of the corium, particularly in the papillæ. The dilated blood-vessels contained, besides red blood-corpuscles, numerous polynuclear leucocytes, and in the larger vessels a few eosinophilous cells. The next stage showed the papillæ and tissue around the vessels infiltrated with large numbers of polynuclear leucocytes, small mononuclear cells, and eosinophilous cells, together with fibrin. In the more advanced processes the papillæ were filled with dense masses of polynuclear leucocytes which pushed up the epidermis, beneath which there was a clear space containing fine strands of fibrin and granules of coagulated albumen. These dense collections of cells in neighboring papillæ became confluent in places, and with increasing serous exudation formed larger and larger vesicles, which were thus situated between the epidermis and the corium. The vesicles were filled with a close, fine or coarse net-work of fibrin, which contained in its meshes numerous polynuclear leucocytes, some of which were disintegrated, a very few detached epithelial cells, a few mononuclear cells, a large number of eosinophilous cells, and a finely granular substance,—coagulated albumen. The whole upper half of the corium was invaded by the same inflammatory material, but the mononuclear cells and the eosinophilous cells were principally aggregated around the vessels. The deeper portion of the corium did not show any change. The pathology of the disease is thus seen to be characterized in its early stages by a very acute inflammation of the papillary layer of the corium, with the formation of vesicles directly beneath the epidermis, and the wandering out of enormous numbers



FIG. 1.

DERMATITIS HERPETIFORMIS.

VESICULAR VARIETY.

The case from which portions of the eruption were excised presented the erythematous and vesicular varieties, distributed principally over the extremities. A small group of minute vesicles situated on an erythematous base was excised. Fig. 1 shows two vesicles (v_1 and v_2) which are situated entirely beneath the epidermis (E), the epidermis itself remaining practically unchanged and being lifted up in a mechanical manner. The contents of the vesicles (v_1 and v_2 , Fig. 1) consist of large quantities of fibrin, coagulated albumen, large numbers of polynuclear leucocytes, many of which are becoming disintegrated, and at the bottom of the vesicle a great number of eosinophiles. The whole upper half of the corium shows a similar acute, inflammatory process, with the formation of much fibrin. The appendages of the skin appear to be unaffected. s, Fig. 1, represents the sweat ducts and glands, and G a sebaceous gland. Magnified about 45 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)

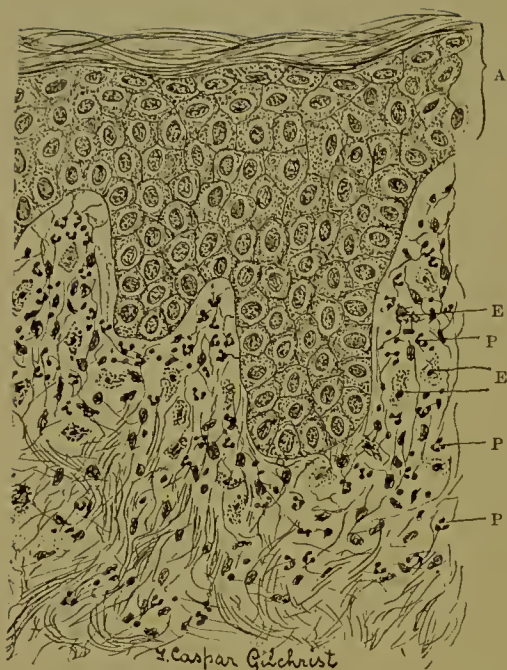


FIG. 2.



FIG. 3.

DERMATITIS HERPETIFORMIS.

ERYTHEMATO-VESICULAR VARIETY.

The earliest changes, as represented in the magnified portion of the same section (Figs. 2 and 3), are seen to occur in the papillæ. The interpapillary portion of the epidermis becomes lengthened out (Figs. 2 and 3) on account of the swelling and pushing upward of the papillæ. Not only does the papillary layer of the corium become the seat of acute inflammatory changes, but numbers of eosinophiles (E, Fig. 2) emigrate into the tissues, although the polynuclear leucocytes (P) outnumber them. This inflammatory process becomes more and more acute, as represented in Fig. 3, where the papillæ are displaced almost entirely by enormous numbers of polynuclear leucocytes (C) which are situated in a fine meshwork of fibrin. The inflammation also extends deeper into the corium, and the eosinophiles continue to emigrate in large numbers. B, Fig. 3, shows a blood-vessel which contains a number of polynuclear leucocytes. Magnified about 300 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)

of polynuclear leucocytes, and also numerous eosinophiles, the epidermis being only passively engaged.

Diagnosis.—The relation of the disease to other well-known forms of eruption, especially to the impetigo herpetiformis of Hebra, is a subject which has not as yet been clearly established. As I have stated elsewhere,¹ considering that the clinical features of impetigo herpetiformis have lately been so sharply defined by Kaposi, it is advisable from a clinical stand-point, at least, that these two diseases be regarded as distinct, although I believe that some cases are really connecting links between the diseases. The resemblance in some, but by no means all, cases to pemphigus naturally suggests a close relationship of the two diseases, and that such exists in these cases there can be no doubt. The causes are in some cases doubtless similar or the same, and, while the clinical features, history, and course of the diseases may also at times be similar, they are often different. Doubtful cases showing symptoms of both may be grouped with one or the other disease as may seem most appropriate. As concerns numerous other cases reported under various titles, for the most part indicative of the predominant clinical symptoms, it may be said that while many seem to represent forms of the disease under consideration, others may with more propriety be referred to other well-known affections, as, for example, pemphigus and erythema multiforme.² The relation of the disease to erythema multiforme is in some cases close, so that the diagnosis may be difficult. The evolution of the lesions, however, will usually determine the question in such cases. Rare forms of the disease in which erythematous, erythematovesicular, and vesicular lesions occur in concentric circles and rings (as observed also in tinea circinata, herpes iris, and in certain rare circinate and annular syphilodermata) have been described and figured, as by Hallopeau,³ under the name Dermatitis Herpetiformis. Such cases may be regarded as illustrating a connecting link between erythema multiforme (herpes iris) and typical dermatitis herpetiformis, but should be classified with the latter rather than with the former disease. In one case described by the author⁴ the lesions at times were distinctly pemphigoid, so that at this date a diagnosis of pemphigus would probably be made; but on other occasions, before and subsequently, peculiar vesicles, blebs, and pustules in combination existed, rendering a diagnosis of pemphigus out of the question. C. Heitzmann⁵ reports a case in which the eruption at one time suggested pemphigus and at

¹ "On the Relation of Impetigo Herpetiformis (Hebra and Kaposi) to Dermatitis Herpetiformis (Duhring)." *Amer. Jour. Med. Sci.*, March 1, 1890.

² "The Diagnosis of Dermatitis Herpetiformis," in *Monatsh. f. prakt. Derm.*, 1888, No. 4.

³ *Pictorial Atlas of Skin Diseases and Syphilitic Affections of Models in the Museum of the St. Louis Hospital, Paris. Part III.* London and Phila., 1896.

⁴ *N. Y. Med. Jour.*, July 19, 1884.

⁵ *Archives of Derm.*, Jan. 1878.

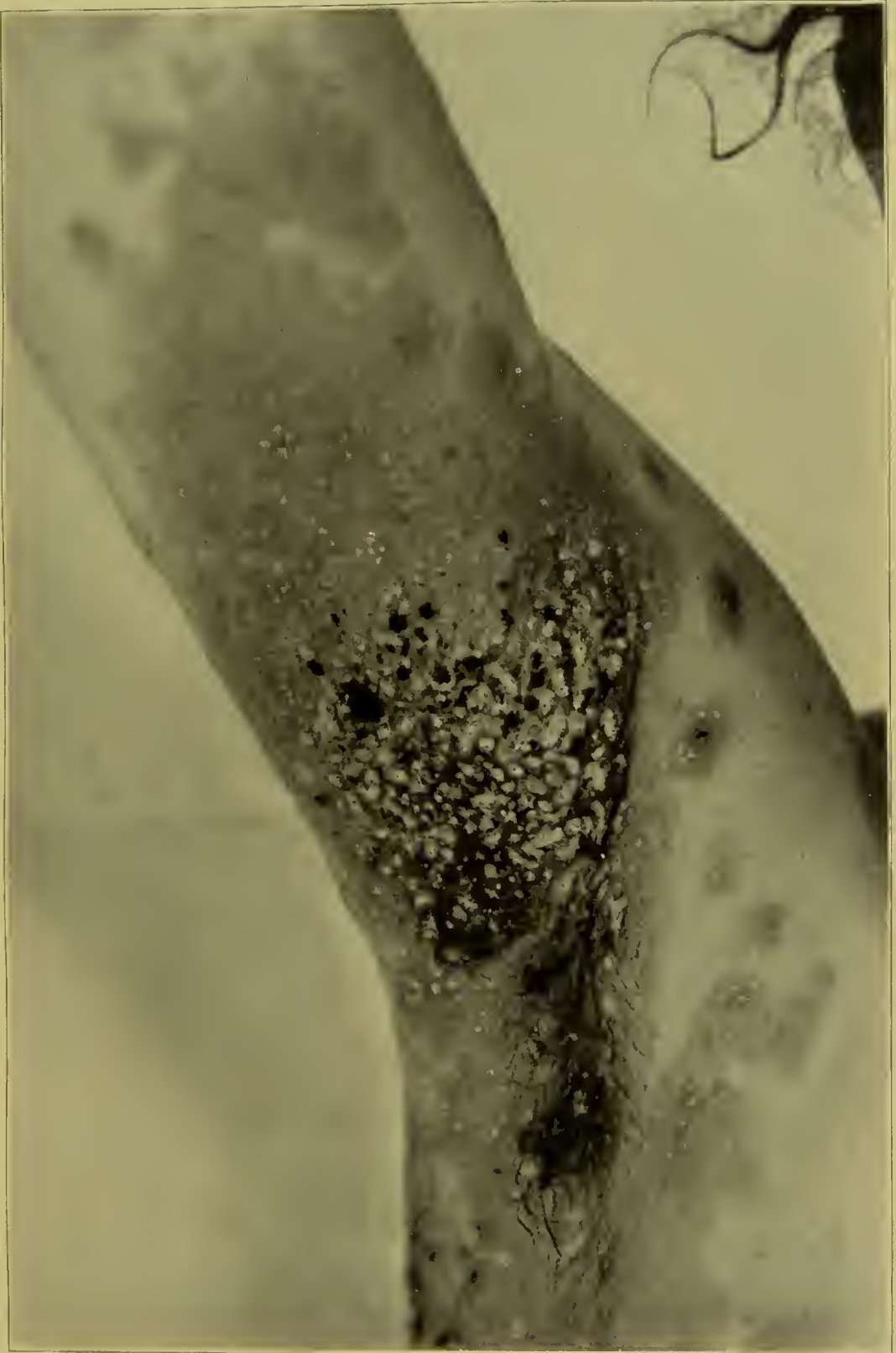
another time impetigo herpetiformis, such cases illustrating the passage of one so-called disease into another, the cause, however, being the same for both forms of eruption.¹ Leredde and Perrin² find in the fluid withdrawn from the blebs eosinophilous cells equal to from thirty to ninety-five per cent. of the total number of leucocytes. These cells are not found in appreciable number in similar affections, including pemphigus, and hence their presence is regarded by these observers as of diagnostic value.

Treatment.—This is usually unsatisfactory, the disease being generally rebellious to both local and internal remedies. Some cases appear to be uninfluenced by treatment, the lesions developing, relapsing, and recurring from time to time in spite of the most varied measures employed. The treatment should be directed towards removing, modifying, or alleviating the probable or ascertained cause, which in certain cases, as in the puerperal state and in nervous conditions, is manifest. But in other instances no such causes exist, the general health being in no particular much if at all impaired. In most cases, however, the nervous system in one way or another is affected, and it is to improving the tone of this controlling system that attention should be directed, as in the case of pemphigus. In some instances arsenic proves distinctly beneficial, while in others it is of no value. It cannot be depended upon, and is less useful here than in pemphigus. Such remedies as cannabis indica, ten to twenty drops of the tincture, three times daily, and antipyrin at night, about twenty grains, as recommended by Mackenzie, may be tried. Phenacetin in moderately strong doses three daily, continued for a week or two, is also of value. Such remedies as atropine, pilocarpine, and ergot may be tried, in some cases proving useful. But each case must receive special treatment according to its etiology. The kidneys especially should receive attentive consideration, with a view to favoring excretion. Locally, in the vesicular and pustular varieties I have found repeatedunctions, with friction, of a strong sulphur ointment to be serviceable in some, especially chronic, cases;³ but in the erythematous variety lotions of tincture of mineral tar, carbolic acid, and the like prove more beneficial. In the latter variety strong remedies are not usually tolerated. Elliot recommends a lotion of ichthyol in water, from twenty-five to fifty grains to the ounce, or, better, of the same strength with equal parts of oil of sweet almond and lime water. Schwimmer speaks well of thiol, using it much stronger, one to three parts of water, painting it on, and then washing it off with pure water. A strong salicylic acid paste is sometimes useful; so also are applications of tar followed by a warm bath.

¹ See an article by the author "On the Relation of Dermatitis Herpetiformis to Erythema Multiforme and to Pemphigus." Amer. Jour. Med. Sci., February, 1897.

² Annales de Derm. et de Syph., No. 6, 1896.

³ See "The Treatment of Dermatitis Herpetiformis." Amer. Jour. Med. Sci., Feb. 1891.



DERMATITIS HERPETIFORMIS.

ACUTE, ERYTHEMATO-PUSTULAR VARIETY.

A patch of aggregated and confluent minute and small, for the most part irregularly shaped, pustules, seated upon an erythematous base, occupying the axilla of a woman, is portrayed. The herpetiform elements of the disease are manifested especially in the outlying minute whitish pustules. Duration fourteen days. (The AUTHOR's case.)



DERMATITIS HERPETIFORMIS.

CHRONIC, MULTIFORM VARIETY.

The case is that of an elderly man. The anterior surface of the thighs is portrayed, but the entire general surface was similarly affected. The lesions were multi-form. The disease was severe. Relapses and recurrences were frequent, in some of which constitutional disturbance and neurotic manifestations were pronounced. Four years later recovery was complete. (The AUTHOR's case.)

PEMPHIGUS.

Syn., Germ., Pemphigus; *Blasenausschlag*; *Fr.,* Pemphigus.

PEMPHIGUS¹ IS AN ACUTE OR CHRONIC EXUDATIVE DISEASE CHARACTERIZED BY VARIOUSLY-SIZED AND SHAPED BLEBS, USUALLY OCCURRING IN SUCCESSIVE CROPS, AND ACCOMPANIED IN MOST CASES BY VARIED GENERAL SYMPTOMS, ESPECIALLY OF THE NERVOUS SYSTEM.

Symptoms.—In the consideration of a disease whose definition and symptoms are not clearly outlined by all writers, and about which there is difference of opinion, it is well to set up a type, or standard, in order that no confusion may arise concerning what is meant. This applies particularly to pemphigus, which as a disease is variously interpreted as regards its essentials, the definition in some instances being broad, in others narrow. Much confusion has in consequence resulted, so that it is best to accept the well-known clinical form pemphigus vulgaris, or common pemphigus, as the type. From this, as the representative of the disease, varieties and deviations may be described, with the view always in mind of holding fast to clinical facts. The etiological factors producing bullous affections of the skin are numerous and varied. It must be remembered that not every bleb is necessarily a manifestation of pemphigus. Blebs, similar in form or peculiar, occur as the result of many different processes, as in erysipelas, varicella, urticaria, erythema multiforme bullosum, herpes iris, dermatitis herpetiformis, dermatitis exfoliativa, pompholyx, seabies, lepra, syphilis, in certain affections in which nerves are specially implicated, in eruptions from drugs, and in certain local affections, as burns and factitious eruptions. In all of these diseases blebs may occur, but they belong to other pathological processes, in most instances in no degree related to pemphigus. A bleb, therefore, in itself does not constitute a pemphigus, nor is every bullous disease a pemphigus. Unna² limits the definition of pemphigus to those bullous diseases in which watery, non-purulent blebs appear in different parts of the body on unreddened or moderately reddened skin, in irregular order or in periodically occurring general outbreaks, but without the formation of characteristic groups or rings, are at most regionally distributed and symmetrical, and appear rapidly with remarkably little subjective disturbance. Thus it will be noted that in this definition "pemphigus vegetans" is excluded.³

Pemphigus occurs both as an acute eruption, sometimes with febrile disturbance, in other cases without, and as a chronic eruption, in like manner with or without fever, but usually with systemic disturbance in

¹ The word pemphigus is derived from *πέμφιξ*, a bleb or blister.

² *Op. cit.*

³ In accordance with this definition, "pemphigus vegetans," "pemphigus conjunctivæ," "pemphigus pruriginosus" (hydroa) and its several varieties (circinatus, confertus, gyratus), "pemphigus syphiliticus," "pemphigus leprosus," "pemphigus neuriticus," "pemphigus hystericus," and finally "impetigo contagiosa" (identified by some as pemphigus acutus neonatorum), are excluded.

some form. Chronic pemphigus is the common, usual, and most important variety. As the acute variety, however, may pass into the chronic, this will be considered first.

PEMPHIGUS ACUTUS.—This may manifest itself either with malaise, fever, or more marked symptoms of general disturbance, or, on the other hand, without such symptoms, the blebs being the only manifestation of disease. Its existence was formerly doubted by authors, and there is reason to believe that cases of other diseases, as herpes iris and impetigo contagiosa, have been not infrequently diagnosed as acute pemphigus. It has been accurately described by Willan,¹ Damon,² Rayer,³ Cazenave,⁴ Neumann,⁵ C. W. Allen,⁶ and others, all of whom refer to cases. It occurs most frequently in children, and is usually ushered in with malaise, a chill, fever, and other symptoms of general disturbance, whence the names “blister fever” (*Blasenfeber*) and “pemphigus febrilis,” “febris bullosa,” by which it has been designated. Cases, especially those occurring epidemically, in which no febrile symptoms are present are peculiar, and may perhaps be instances of impetigo contagiosa, or more probably of some unknown, acute, infectious disease. It also occurs in adults with much the same symptoms and course, as the cases recorded by Köbner,⁷ Allen,⁸ and others prove; and there are other cases on record showing that the acute form of the disease may prove serious, as reported by Delavan,⁹ Payne,¹⁰ and Southey.¹¹ In a case reported by Pitt,¹² the subject was a tanner, aged fifty, septicæmia appearing to be the cause. The man succumbed in a fortnight from the beginning of the attack. The blebs may all come out at one time, or, as is usually the case, in crops, the eruption disappearing within a month, not to return. Occasionally it passes into the chronic form. It is, however, generally benign in type, and in most cases possesses features which ally it as a process to the eruptive fevers, and also more closely to the acute pemphigus of infants, to be referred to. It is not to be confounded with examples of other diseases in which blebs may appear, and which have

¹ Cutaneous Diseases. London, 1808. Willan described pemphigus in his Order Bullæ, under the name Pompholyx. He defined it as an eruption of bullæ without any inflammation around them, and without fever.

² Archives of Derm., July, 1881.

³ Treatise on the Diseases of the Skin (English translation by R. Willis). London, 1835.

⁴ Manual of Diseases of the Skin (translated from the French by J. H. Burgess). London, 1854.

⁵ Hand-Book of Skin Dis. New York, 1871.

⁶ Jour. Cut. and Gen.-Urin. Dis., April, 1888.

⁷ Archiv für Derm. u. Syph., Bd. i. (1869) p. 209.

⁸ Loc. cit.

⁹ N. Y. Med. Jour., vol. i. (1881) p. 102.

¹⁰ St. Thomas Hosp. Rep., vol. xii.

¹¹ Clin. Soc. Trans., vol. viii. p. 179.

¹² Pemphigus Malignus. Path. Soc. Trans., vol. xl., 1889, p. 303.



PEMPHIGUS.

ACUTE, VULGARIS, OR COMMON VARIETY.

The forearm and hand are portrayed, but the general surface is more or less invaded. The subject is a spare, neurotic young woman. The blebs are varied in form, some being rounded, others elongate. Duration of the lesions depicted, one week. (The AUTHOR's case, from a water-color drawing.)



PEMPHIGUS.

VULGARIS, OR COMMON VARIETY.

A delicate boy, seven years of age, with blue eyes, thin skin, and chronic knee-joint disease, probably tuberculous. The disease of the skin had existed two years, in the form of numerous attacks, each of from three to nine weeks' duration. The general surface was invaded, but the extremities were especially affected. Malaise and chills or rigors accompanied most of the bullous outbreaks. Arsenic proved the most useful drug. (After ERASMUS WILSON, *Portraits of Diseases of the Skin.*)

been enumerated. It is rare, as may be inferred from the observation that its existence has been denied by some authors.

PEMPHIGUS NEONATORUM, EPIDEMIC PEMPHIGUS.

Another variety of the acute form of the disease, differing in certain particulars from that just described, is designated PEMPHIGUS NEONATORUM, affecting infants within a short time after birth, not due to syphilis, and often occurring epidemically. As illustrative of the disease, Kilham¹ reports an epidemic which occurred in a New York lying-in institution newly opened, the first child born being affected with vesicles and blebs on the legs and abdomen, which disappeared without treatment in a few weeks. During the following month eleven infants were born in the asylum, eight of whom were affected with the same disease, which appeared a few days after birth, and ran a similar course in all, terminating benignly in a fortnight. Each crop of blebs lasted from a few hours to two days, and was followed by a fresh crop. All regions except the palms and soles were invaded, but the abdomen and the inner surface of the thighs were usually attacked. The general health was good, and remained so, there being no fever and no loss of weight. Syphilis was excluded. Bacteriological examination resulted negatively. Ravogli² records an epidemic in Cincinnati. Corlett,³ of Cleveland, has described a series of cases of acute pemphigus in the newborn, in most of them about three-fourths of the general surface of the body being involved. All the cases occurred in the practice of one midwife, and the disease was regarded as contagious. It has been repeatedly noted by observers of such epidemics that they occurred in the practice of one midwife, and in many instances there is no doubt that the infection arises from such or similar sources. Epidemics of this kind have been more frequently observed in Europe than in this country, as reported by Olshausen and Mekus,⁴ Hamolle,⁵ Barthel,⁶ Padosa,⁷ and others. In the epidemic noted by Olshausen and Mekus, in Halle, hundreds of infants were affected. It was acute, non-febrile, and contagious, but was not inoculable. It resembled varicella more than any other disease. The question of contagion occasionally arises with this form of eruption, it being difficult either of proof or of denial. Thus, Salvage⁸ reports a case occurring in an infant three days after birth, in which the

¹ Amer. Jour. Obstet., 1889, p. 1039.

² Cincinnati Lancet-Clinic, 1889.

³ Indiana Med. Jour., Nov. 1893, p. 158.

⁴ Archiv für Gynäkologie, 1870.

⁵ Gaz. Hebdom., Nov. 13, 1874; abstract in Arch. of Derm., Jan. 1875. A report of a similar epidemic in the Lying-in Hospital at Leipsic, from Arch. für Gynackologie, may be found in the London Medical Record, June 3, 1874.

⁶ St. Petersb. Med. Woch., No. 1, 1876.

⁷ Giorn. Ital. d. Mal. ven. e d. Pelle, xi. (1876) p. 30.

⁸ Lancet, April, 1891, p. 850.

palms and soles were the only regions that remained free. Syphilis was excluded. Four days after the disappearance of the blebs on the infant, similar lesions manifested themselves on the breasts and forearms of the mother. The diagnosis of impetigo contagiosa rather than pemphigus naturally suggests itself in such cases, but the observers state distinctly that the disease they are describing is not impetigo contagiosa. When pemphigus occurs epidemically, infants and children are almost exclusively the subjects, adults being attacked only occasionally, so that it may be said to be a disease of infancy and early childhood.

P. Manson,¹ of China, describes a contagious form of bullous disease, or "pemphigus," occurring chiefly in hot weather, which is auto-infectious and readily communicated to others, one peculiarity being peripheral spreading after rupture of the blebs. The description resembles that of impetigo contagiosa. The blebs are distended in a variable degree, often tensely so, while in other cases they are flaccid; they are usually discrete, inclining to coalesce only when in close proximity; and occur in a disseminated manner, without tendency to invade special regions. In number they vary much, in some cases a half dozen or a dozen existing, while in others there may be scores or hundreds, of all sizes and in all stages of evolution. Their color is also variable, new ones being pale yellow or straw-colored, but those more mature generally show steel-colored, bluish, greenish, or violaceous hues, due partly to reflected light. As a rule, they do not incline to rupture, but they are often broken through contact, the remaining fluid drying into yellowish or brownish crusts, variable as to size and shape. A reddish, more or less excoriated or erythematous spot follows the bleb, which heals over rapidly or slowly, according to the form of the disease.

In pemphigus vulgaris each bleb, according to its size and other circumstances, runs its course in from three to six or twelve days, according to the acuteness or the sluggishness of the process. A notable symptom usually present is the disposition of the lesions to appear in crops, accompanied by constitutional disturbance (especially malaise, or general depression of the nervous system, and fever), successions of which at variable intervals may keep up the disease for an indefinite period.

The subjective symptoms are generally not marked, but at times there are itching and, in some cases, burning and pain. Itching is occasionally a prominent symptom, and some authors, as Hardy and Piffard, make a special variety ("pemphigus pruriginosus") because of this feature, but most of these cases will be found to be herpetiform in character, and, according to the author's views, are more closely allied to dermatitis herpetiformis than to pemphigus. This form is the "hydroa herpetiforme" of Tilbury Fox and Crocker, and the "hydroa bullcux" of some French authors.

¹ Quoted from Crocker, loc. cit., p. 224.



PEMPHIGUS.

CHRONIC, VULGARIS, OR COMMON VARIETY.

The subject is a woman twenty-five years of age. The disease of the skin began at eighteen years of age. The onset was sudden, large numbers of blebs forming rapidly and continuously over the general surface. The amount of fluid discharged from the lesions not infrequently amounted to a quart in twenty-four hours. The mucous membranes (mouth, vagina, and conjunctiva) were affected. There was considerable pigmentation, and in some localities the skin was rough and thickened. Recovery eventually occurred under the long-continued use of arsenic. (Dr. A. W. BRAYTON'S case.)

Examples of solitary blebs, or a few blebs at most, occurring here or there, usually on the extremities, at intervals of a few days or a week, and generally running an acute course, unaccompanied by inflammation, are occasionally met with, and constitute the so-called "pemphigus solitarius." It is met with usually in adults, and oftenest during middle life. It generally assumes an essentially chronic course, occasionally passing into other varieties and forms of the disease. In favorable cases, under proper treatment, improvement, as a rule, sets in gradually, the patient recovering completely. In other cases new blebs appear from day to day (PEMPHIGUS DIUTINUS), and as the disease advances, febrile symptoms occur, especially at night, with pain and loss of sleep, the patient being thus much harassed by the disease. Occasionally the lesions assume a circinate arrangement (PEMPHIGUS CIRCINATUS), as in herpes iris; in other cases a marginate or serpiginous form. Such cases are generally examples of erythema multiforme bullosum. Hardy¹ describes a form under the name of "pemphigus virginum," extending its course over several months, which he has met with only in girls from fourteen to twenty years of age in whom menstruation has been interrupted. This is the same form as the "pemphigus hystericus" of some authors.

Thus it will be noted that the lesions of pemphigus evince a tendency to assume numerous and different forms. Their mode of evolution and involution is variable. Forms incline to run into one another, and this accounts for the many different clinical aspects described by writers. It is this fact that renders the disease so difficult to study and to arrange into varieties.

The mucous membranes of the mouth, pharynx, epiglottis, arytenoid cartilages, trachea, bronchi, vulva, anus, and even of the alimentary canal, are not infrequently invaded, especially in the varieties malignus and vegetans, giving rise to varied local lesions, mostly whitish patches and excoriations. In grave cases there are pain and difficulty in breathing and swallowing, diarrhoea, exhaustion, collapse, and a fatal ending. In very rare cases the mucous membranes may be involved to the partial or entire exclusion of the skin, as in cases reported by Symonds² and Crocker.³

PEMPHIGUS CHRONICUS.—This is the common form of the disease, and, as the title implies, it runs a chronic course, extending often over months or years, either as a constant eruption, the lesions coming and going usually in more or less distinctly marked crops, without cessation, or in the form of recurrences at short or long intervals. The disease may manifest itself insidiously, a few blebs appearing here or there without other cutaneous or general symptoms, or, as is usually the case, it is preceded by or accompanied by malaise, chills, fever, elevation of temperature, vomiting, and other signs of constitutional disturb-

¹ *Traité Pratique et Descriptif des Maladies de la Peau.* Paris, 1886.

² *Clin. Soc. Trans.*, vol. xxiii., 1890.

³ *Op. cit.*, p. 220.

ance. In most cases the lesions are true blebs, containing a clear, serous fluid, and remain such throughout their course, the contents, however, becoming cloudy or more or less puriform as they mature or undergo involution. Sometimes they are streaked with blood, especially during the period of their involution, giving them a reddish cast, and in rare instances considerable blood is mixed with the serum, constituting PEMPHIGUS HÆMORRHAGICUS.

The blebs may arise from apparently healthy skin, often abruptly, or be preceded by a reddish, erythematous spot; as a rule they are without areolæ, but at times this feature is present, though seldom in a marked degree. F. Hebra¹ describes the mode of their appearance as follows: "Sometimes a circumscribed light-red spot appears, perhaps of the size of a bean or large coin; this is paler in the centre, and may even present a tinge of white, indicating the point at which the bleb is to form, and from which it will spread outwards over the surrounding red surface. In other cases the spot, besides being red, is raised above the level of the surrounding skin, and in fact is at first a wheal, passing afterwards into a bleb. In other cases the bleb is not preceded either by a red spot or by a wheal, but begins originally as a small collection of clear fluid beneath the cuticle. Thus hyperæmia of the skin may exist before exudation is poured out, or the latter may be formed before any congestion of the papillary layer is discoverable." Blebs vary in size from that of a hazel-nut to that of a walnut, and may be even as large as a chicken's or a goose's egg. They are usually rounded or ovoidal or through confluence irregular in outline, and are considerably raised above the surrounding skin, not infrequently as much as half an inch.

The amount of serous fluid exuded from the skin through the blebs in pemphigus vulgaris is variable, but in extensive cases it may be large, amounting sometimes to several quarts daily. In malignant cases and in the foliaceous variety it may be even larger. The author has observed very profuse and long-continued discharge from the mouth, which was invaded in a malignant and fatal case, some days as much as three quarts in the twenty-four hours being poured out. The flow was not only copious, but continuous day and night. Occasionally profuse discharges from the vagina of a watery fluid (not urine) have been noted, as in a case reported by Cummins.²

PEMPHIGUS FOLIACEUS.—This variety, first described by Cazenave,³ may begin as such, or may succeed the common form, the blebs of the latter tending to flatten and to become flaccid. The epidermis gets to

¹ Diseases of the Skin, including the Exanthemata, translated by C. Hilton Fagge and P. H. Pye-Smith, vol. ii. p. 388, London, 1868. This author, who has given the clearest clinical description of the disease, recognized pemphigus chronicus only, making two varieties of the same, P. vulgaris and P. foliaceus (Cazenave). An acute pemphigus was not admitted by him.

² Brit. Med. Jour., 1884.

³ Gazette des Hôp., Oct. 1850.

be undermined with fluid, and is thus loosened and in time exfoliated. The bleb formation spreads on the periphery, being abortive and imperfect, and this constitutes one of the chief features of the lesions. The blebs are broken down before they arrive at maturity. As the disease progresses the epidermis becomes weaker and the horny layer so defective that oozing or abundant discharge, sometimes with blood and crusting, takes place. In other cases the discharge may be slight, in which event exfoliation is more marked. Cazenave¹ compared the crusting and scaling to flaky pie-crust. The greater part or the whole of the surface is usually involved.² The epidermis is in grayish, variously sized lamellæ and shreds, beneath which the mucous layer exists as a moist or wet, reddish, excoriated surface.³ The attempt at bleb formation, more or less imperfect, goes on, one crop of abortive lesions succeeding another, until in almost all cases, sooner or later, the patients are exhausted, through the discharge or through involvement of internal organs, and succumb. This variety of pemphigus is a very rare form of disease. In this country cases have been recorded by Sherwell,⁴ Hardaway,⁵ Graham,⁶ Klotz,⁷ and others. The disease, however, does not always run a typical course, variations being not uncommon. At times the eruption bears more resemblance to dermatitis exfoliativa than to pemphigus, blebs being the exception; in other cases it manifests symptoms in common with pemphigus vegetans or even with impetigo herpetiformis. The occurrence of chills with this variety has been especially noticed, and relapses are common, occurring either at short or at long intervals. Sherwell⁸ reports a case in which no relapse took place until eleven years after the first attack. Between the exacerbations the skin becomes drier, or even dry, and ragged exfoliation goes on, much the same as in certain stages of dermatitis exfoliativa. When the blebs do not form as usual, other signs of cutaneous disturbance, as a reddened skin and an exfoliating epidermis, or œdema of the skin, or aching throughout the body, or internal pains, are generally present.

¹ A colored portrait representing this form of the disease is given in his *Atlas of Skin Diseases*, Paris, 1856. Crocker in his *Atlas* also portrays the disease.

² The author recalls the case of a man, some thirty years of age, who was afflicted with this variety of the disease in its universal form. There was not a square inch of healthy tissue upon his surface, the finger-tips even being affected. He was a patient in the Vienna General Hospital, and at the expiration of a year and a half was still in a most distressing state. The continuous plain water bath, in which he lived for months, afforded him more relief locally than any other mode of treatment. Such cases are almost invariably fatal, although the disease may be protracted for a long period.

³ Foliateous pemphigus, showing the large scales and flakes of semi-detached epidermis, is well portrayed in Hebra's and in Neumann's atlases.

⁴ *Archives of Derm.*, Jan. 1877.

⁵ *Jour. Cut. and Gen.-Urin. Dis.*, 1890, p. 22.

⁶ *Canadian Jour. Med. Sci.*, June, 1879.

⁷ *Amer. Jour. Med. Sci.*, Dec. 1891.

⁸ *Jour. Cut. and Gen.-Urin. Dis.*, 1889, p. 453.

Pemphigus may be benign or malignant in its course and ending, from which fact the clinical varieties PEMPHIGUS BENIGNUS and PEMPHIGUS MALIGNUS have been recognized. In a general way the terms are useful for briefly expressing the form of disease present from a clinical stand-point. It will, however, be understood that the benign form may at any period take on a malignant type, and that in most instances not until the termination can the form be safely stated. The disease is often insidious and disappointing in its course. The malignant form is characterized by nervous depression or a lowered state of vitality generally, the subject soon running into a cachectic state. The lesions are characterized either by increased size or number, forming rapidly or in quick succession, becoming flaccid or bloody, with excoriated, vegetating or bleeding bases, tending sometimes to gangrene (PEMPHIGUS GANGRÆNOSUS). The termination of these cases is usually fatal, lung complications or diarrhoea not infrequently occurring, the process thus affecting the various mucous membranes as well as the skin.¹

PEMPHIGUS VEGETANS.—Under this name Neumann² described a peculiar form of disease having the character of a bullous erythema and a pemphigus together, with the formation of vegetating, fungoid, papillary growths, closely resembling condylomata, and the earlier cases observed by Hebra and Kaposi³ were regarded as syphilitic.⁴ The disease is very rare, but has since been studied by Crocker,⁵ Hyde,⁶ Haslund,⁷ C. Müller,⁸ Marianelli,⁹ Hutchinson,¹⁰ Riehl,¹¹ Lowe,¹² and others. Through Dr. Hyde I had the opportunity of examining his case, and would here endorse his accurate description of the disease. Another fatal case, occurring in an elderly lady in the upper walks of life, has also been observed by the author. The flaccid blebs upon rupturing were replaced by soft mucoid, hypertrophic plaques. The mucous

¹ The author takes the view that certain cases of "pemphigus malignus" are, more properly speaking, examples of pemphigus vegetans. In the case of "pemphigus foliaceus malignus" reported by Munro and Swarts (*Jour. of Cut. and Gen.-Urin. Dis.*, 1891, pp. 332 and 423) "the masses of adherent yellowish-brown crust half an inch thick covering the scalp, chest, and abdomen" are suggestive of pemphigus vegetans.

² *Viertelj. f. Derm. u. Syph.*, 1886, p. 157. (With plates.)

³ *Die Syphilis der Haut*, Wien, 1873, plates liii. and liv.

⁴ Unna (*op. cit.*) looks upon pemphigus vegetans as a local infectious, auto-inoculable dermatosis, and proposes the name "erythema bullosum vegetans" for it, separating it from pemphigus; but to this view, in the light of our present knowledge, the author is not prepared to accede.

⁵ *Med.-Chir. Trans.*, vol. lxxii., 1889, p. 233. With bibliography.

⁶ *Jour. Cut. and Gen.-Urin. Dis.*, 1891, p. 412.

⁷ Quoted by Crocker.

⁸ *Monatsh. für prakt. Derm.*, Bd xi., 1890, p. 427.

⁹ *Contributo allo Studio del Pemfigo vegetante*, 1889. Abst. from *Giorn. Ital. d. Malatt. ven. e d. Pelle*. Giugno, 1889.

¹⁰ *Med.-Chir. Trans.*, vol. lxx.

¹¹ *Zur Kenntniss der Pemphigus*. *Wiener Med. Jahrb.*, 1885.

¹² *Lancet*, May 23, 1891.

membranes were much affected. The disease usually begins on the mucous membranes, with reddish or whitish patches, often in the mouth or the pharynx, when pain on swallowing may be the first symptom noted. Sooner or later blebs, small or large, tense or flaccid, with an erythematous base, appear insidiously, slowly or rapidly, on various parts of the skin. They become excoriated, and leave an œdematous, reddish, inflamed, exposed mucous layer, tending to spread and to secrete a viscid fluid offensive in odor. In the course of weeks or months flat condylomatous or papillary formations, often with discoloration and pigmentation, manifest themselves, and by coalescing constitute variously sized patches, which may occupy areas of large size.¹ As a rule, there is no disposition on the part of the lesions to heal over and to disappear, although this course may sometimes be noted. The blebs, or mucous areas in the place of blebs, may arise insidiously and grow slowly in a progressive manner, or may appear in crops. Constitutional disturbance, with elevation of temperature, usually exists, depending on the amount of eruption and the stage of the disease. At some periods the temperature may be subnormal. The process pursues a variable course, but is usually chronic, exhausts the patient, and almost invariably terminates fatally, especially where the greater portion of the general surface is involved. Jonathan Hutchinson has met with a milder form of the disease, in which the mouth was mainly affected, the patients recovering.

A peculiar form of disease to which the name "pemphigus conjunctivæ" has been given may be referred to. Vesicles and blebs on the skin are occasionally associated with conjunctival or ocular disease, as in the "essential shrinking of the conjunctiva" originally described by Von Graefe, a case of which is reported by Morris and Roberts.² It is, however, a question whether all cases of this form of disease should be considered as pemphigus. Unna³ regards it as a distinct disease of the eye, with destruction of the conjunctival sac and leucoma of the cornea terminating in blindness.

Reference may be made to the milium-like bodies that are sometimes met with in skin that has been affected with pemphigus. They both form and are cast off more rapidly than typical milium as observed on the face. They can hardly be regarded as true milia.

Etiology.—Pemphigus is a rare disease, and I believe it to be of less frequent occurrence in this country than in Europe. According to the

¹ Pemphigus vegetans occupying the vulvar region is depicted by Neumann in his Atlas, the circumscribed, broad, condylomatous growths being conspicuous (Lief. xii., Taf. xxxi.; see also Lief. iv., Taf. xxii.). An example of the same disease in a late stage is represented by Crocker in his Atlas of the Diseases of the Skin, Fasciculus vii., plate 19.

² Brit. Jour. of Derm., April, 1889, with portrait, showing vesicles on conjunctivæ and skin. The article contains reference to twenty-eight published cases.

³ Op. cit., p. 172.

statistics of the American Dermatological Association, but 291 cases were encountered out of 204,866 cases of miscellaneous skin disease.¹ Of pemphigus neonatorum only three cases were reported in the same statistics; but such forms of disease naturally fall under the observation of obstetricians rather than of dermatologists. White, in Boston, reports having met with 15 cases out of 5000 consecutive cases of skin disease in dispensary practice, a large proportion of these having occurred in infants. Bulkley,² in New York, reports a smaller proportion in the United States,—namely, 17 cases out of 8000 cases of skin disease. McCall Anderson,³ in Scotland, records only 53 cases of pemphigus out of 24,891 consecutive cases of skin disease, and probably these were not all separate cases, but in some instances were recurrences in the same patient. Kaposi⁴ reports that among 45,000 cases of miscellaneous skin diseases observed in the Vienna General Hospital from 1866 to 1889 there were 182 cases of pemphigus, or 4.7 per cent., which is a larger proportion than is found in most countries. Of these cases 33 (seventeen per cent.) died, but of the remaining eighty-three per cent. he does not think all recovered: so that in Vienna hospital practice the cures are small and the prognosis is consequently bad. According to my experience, the percentage of true chronic pemphigus in Philadelphia is very small, the disease being only occasionally met with in either public or private practice.

The causes are variable, and in most cases are obscure. Both sexes suffer. Kaposi states that in Austria the disease is three times more frequent in males than in females, but statisticians in other countries find that females are most prone to it, and this has been my experience. The disease in most cases will be found to be associated with debility or a low or depressed state of the general system, affecting especially the nervous centres, brought about by various causes, including infection. The nervous system in pemphigus vulgaris is, in my opinion, generally, if not always, involved. Debility, overwork, anxiety, emotional states, mental depression, functional nervous disorders, nervous prostration, as well as organic changes in nervous centres, caused sometimes by infection, are all to be regarded as factors of the disease. Not infrequently psychical causes are accountable for its production, as the reports of numerous cases show. Du Mesnil⁵ reports a case in which he was able by verbal suggestion alone, without any irritation of the skin, to produce a characteristic eruption. Various forms of mental excitement and depression and allied states of the nervous system, as in the case of dermatitis herpetiformis, often lead to the disease. In some cases, however,

¹ Morrow's System of Dermatology, New York, 1894.

² Archives of Derm., vol. viii. (1882), No. 4.

³ Op. cit., p. 251.

⁴ Wiener Med. Presse, No. 23, 1890.

⁵ Arch. für Derm. u. Syph., Bd. xxx., Heft 2.

obvious causes of this kind are wanting. Hysteria and allied states, and uterine, ovarian, and menstrual disorders, may prove causes, and it has been noted to show itself first during pregnancy. Various internal diseases, and affections of special organs, as the kidney and the liver, are known to be in some cases associated with pemphigus.

Acute pemphigus occasionally is the result of rheumatic fever, and as illustrative of this etiological variety I may quote a case reported by R. A. Bayliss,¹ occurring in a lad aged sixteen. The disease began with pain and swelling of wrists and hands, and a temperature of 102° F. There was a mitral systolic murmur over the heart's apex. There was no albumen in the urine. Four days after admission to the hospital large blebs upon red bases appeared on the face. During the next four days successive crops appeared in striated form around the neck, which were very painful. Later the back, chest, arms, wrists, and legs were invaded. On rupturing, raw, crusted surfaces resulted. The eruption lasted three weeks, during which period the evening temperature remained at 100° F. At times it occurs in adults associated with albuminuria and hemorrhagic nephritis, and may terminate fatally, as in a case reported by Duckworth,² in which one-sixth of the general surface was invaded by blebs, the patient, with a high temperature and in a typhoid state, dying on the ninth day after the beginning of the cutaneous manifestation. Occasionally albuminuria follows pemphigus. It may also occur in connection with Bright's disease and uræmia. In some cases it occurs after the exanthemata, particularly measles, as in cases reported by Stuart³ and Robinson,⁴ and also after vaccinia and diphtheria. It has also been observed to follow scarlatina.

Unless complicated, the disease is not contagious. In rare instances, where peculiar forms of eruption exist, as in cases reported by Riehl⁵ and Pontoppidan,⁶ contagion seems probable, but allied diseases, as impetigo contagiosa, must be eliminated in the diagnosis. Syphilis, as is well known, occasionally gives rise to a bullous eruption resembling pemphigus, but with a different train of clinical symptoms from pemphigus vulgaris. To the same category as syphilitic blebs belong the blebs of lepra.

Goldscheider,⁷ Valentin,⁸ Köbner,⁹ and Elliot¹⁰ have reported cases in which there existed a congenital predisposition on the part of the skin to the formation of blebs, most marked in summer. Thus, Köbner

¹ Lancet, Aug. 19, 1893, p. 439.

² St. Barthol. Hosp. Rep., vol. xx. (1884) p. 41.

³ Quoted by Damon, Archives of Derm., 1881, p. 240.

⁴ Op. cit., p. 234.

⁵ Jour. Cut. and Ven. Dis., 1885, p. 220.

⁶ Pemphigus acutus contagiosus adultorum. Jour. Cut. and Ven. Dis., 1885, p. 220.

⁷ Arch. of Derm., Jan. 1878.

⁸ Berl. Klin. Woeh., 1885.

⁹ Deutsch. Med. Woeh., 1886, No. 7.

¹⁰ Two cases of epidermolysis bullosa. Jour. Cut. and Gen.-Urin. Dis., Jan. 1895.

mentions the instance of a mother and her three sons, in all of whom the skin looked normal, but the slightest local irritation, especially of the feet, gave rise to blebs. Legg¹ records an instance in which a brother and a sister out of five children were similarly affected, and Payne has recorded a like example, which Cavafy states was a counterpart of Legg's case.² Cases of this kind, in the author's opinion, are more properly to be regarded as epidermolysis bullosa, and are better classified under dermatitis than with pemphigus. The term "hereditary pemphigus" applied by some writers to these cases is objectionable. Kaposi³ records an instance, occurring in a young man, whose maternal uncle, mother, sister, and half of his children were subjects of the disease; and C. Blumer⁴ found the condition to exist in sixteen members of one family, eleven males and five females being affected. The latter observer regards it as analogous to hæmophilia, and thinks that the name EPIDERMOLYSIS BULLOSA HÆREDITARIA is the best of all that have been proposed.

Pathology.—The pathological anatomy resolves itself into changes noted in the skin and in the various organs and tissues of the body. Autopsies show that varied structural changes are sometimes observed in association with the cutaneous manifestation, including disease of the brain, medulla oblongata, cord, ganglia, and peripheral nerves, liver, kidney, and other organs. It is now generally recognized that it is a disease usually involving other tissues and organs than the skin, a view with which the author is entirely in accord. Its usual mode of onset, often with malaise, chills, fever, high temperature, constipation, and general functional disturbance, points plainly to systemic involvement, variable in degree, depending on the form of the disease present. In some cases of a different type, however, such symptoms do not occur, the disease being more strictly cutaneous. The pyrexia symptoms so often noted, and especially the chills and elevation of temperature, suggest the view that not infrequently the disease is of an infectious nature. This is doubtless the case in many instances. The lesions in pemphigus vegetans especially impress one as being of this nature. Pernet and Bulloch⁵ record seventeen cases of acute pemphigus, which were peculiar in that they affected butchers, following a wound on the hand, and ended fatally. In such cases the disease is probably due to a micro-organism, and is closely allied in its etiology to a group of very similar cases in which the subjects come in contact with dead animals or dead portions of animals. The causal relationship which exists between

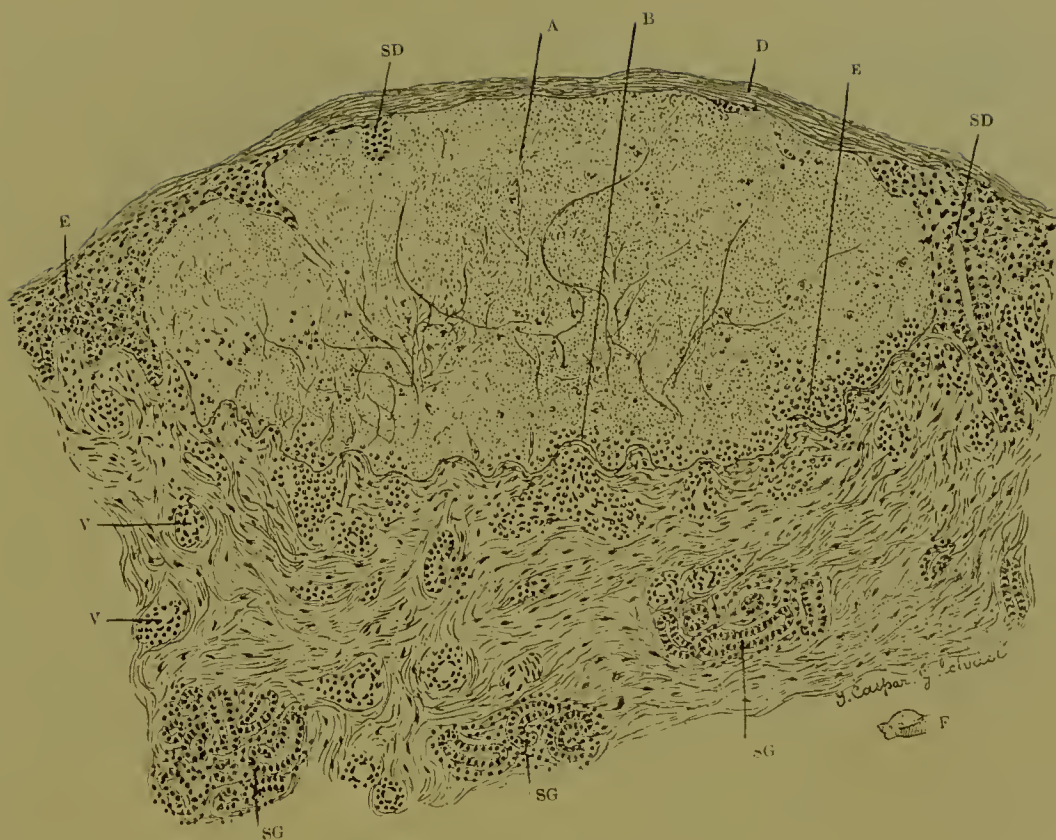
¹ St. Barthol. Hosp. Rep., vol. xix.

² Jour. Cut. and Ven. Dis., 1884, p. 345.

³ Pathology and Treatment of Diseases of the Skin (trans. from the German). New York, 1895.

⁴ Arch. für Derm. und Syph. (Ergänzungsheft), 1892.

⁵ Brit. Jour. of Derm., May and June, 1896.



PEMPHIGUS.

VULGARIS, OR COMMON VARIETY.

The drawing represents the early formation of a bleb (A), less than twenty-four hours old, between the corium and the epidermis. The contents of the bleb consist of fibrin, coagulated albumen, a few lymphoid cells, numerous polynuclear leucocytes, which are especially massed at the base of the bleb (c), and a few epithelial cells. The papillary layer of the corium shows the presence of acute inflammatory changes, together with marked serous exudation, particularly around the vessels. The bared papillæ (B) form the base of the bleb. The reticular portion of the corium is practically normal, as well as the sweat-glands (SG), except where the sweat-duets (SD) are involved in the bullous formation. F represents the natural size of the bleb; v represents blood-vessels; E, the mucous layer. Magnified about 25 diameters. (Dr. T. CASPAR GILCHRIST's case, section, and description.)



PEMPHIGUS.

VULGARIS, OR COMMON VARIETY.

Section of a pea-sized bleb one day old. The drawing represents one-half of the lesion. A is corneous layer; B, mucous layer; C, bleb; D, upper part of corium; E, hair follicle; F, base of bleb; G, deep part of corium. The bleb lies mainly between the mucous layer and the corium; at the peripheral part it is within the mucous layer. The lowest strata of the mucous layer are destroyed. The corneous layer is intact. The bleb is formed by an exudation passing rapidly from the blood-vessels. At the margins the fluid destroys the lower cells of the mucous layer, and passing between others separates them and forms compartments of various sizes, bounded by elongated cells of the mucous layer, forming band-like structures. The contents of the bleb are serum and a varying number of leucoytes. In the drawing the serum is coagulated. The normal line of separation between mucous layer and corium is indistinguishable. The papillæ have disappeared in the central part. The corium is œdematous, the blood-vessels are dilated, and a marked leucoeytic invasion exists down to the deep part of the corium, which is most marked around the blood-vessels. (Dr. A. R. ROBINSON'S section, drawing, and description.)

neuroses and infections is well known. This is noted sometimes typically in herpes zoster and in certain varieties, especially malignant forms, of pemphigus. Upon this point in connection with special varieties of malignant pemphigus, V. Babes,¹ of Bucharest, has made a valuable contribution.

The changes which occur in the skin just prior to and attending the formation of the bleb are variable. Not infrequently in the beginning serous exudation takes place without the usual signs of inflammation; in other cases inflammation, variable in kind and degree, is present. The structural changes attending the involution of the bleb also vary, and there is some diversity of opinion concerning its anatomy. But this may be accounted for by the fact that observers are far from being unanimous as to what constitutes true pemphigus, and that more than one form of bullous disease (due to varied causes) have been described under the name of pemphigus. Inflammatory symptoms in some cases are slight, in others marked, as shown by more or less of an areola, and especially the base of the bleb, which may be pale, deep or violaceous red, and œdematous or hypertrophied. The site at which the exuded fluid separates the layers of the epidermis varies somewhat, according to the cause of the bleb-formation and the size and age of the bleb, although it may be stated that in most cases of pemphigus vulgaris the horny layer forms the greater portion of the roof of the bleb. As Robinson² and Crocker,³ however, have shown, the fluid exudation sometimes permeates the mucous layer laterally and causes its disintegration and separation at different points in its strata. I am inclined to the view that much depends on the variety of the disease examined, especially as to the degree of neuritic inflammation, and that the more of the latter is present the more deeply seated is the bleb. Thus, in so-called pemphigus pruriginosus, in which the neuritic inflammation is marked, the bleb arises directly from the papillary layer, which is generally affected.

The contents of the blebs have been examined for micrococci by Spillmann,⁴ Gibier,⁵ and Colrat,⁶ and micro-organisms were found by these observers, but none that were characteristic or pathogenetic. Demme⁷ in acute pemphigus found diplococci, and Daehnhardt⁸ in a case of chronic pemphigus found diplococci in the contents of the blebs and also in blood from the finger. Pure cultivations of the cocci were obtained, the colonics having a grayish-white appearance. In the blebs

¹ Internat. Atlas of Rare Skin Diseases, Part ix., plate 26.

² Manual of Dermatology, New York, 1884, p. 237.

³ Op. cit., p. 231.

⁴ Annales de Derm. et de Syph., Jan. 1881.

⁵ Jour. Cut. and Ven. Dis., 1882-3, p. 125.

⁶ Quoted from Kaposi, op. cit.

⁷ Verh. des Cong. für innere Med., Wiesbaden, 1886, p. 336.

⁸ Deutsch. Med. Woch., No. 32, 1887.

of certain special varieties of pemphigus V. Babes¹ has described staphylococci and a peculiar streptococcus (*streptococcus giganteus*).

Whipham,² in his study of two unusually severe cases of acute pemphigus, one of which recovered and the other died, found in the contents of the blebs of the child during life a diplococcus answering in every respect to that found by Demme, Claessen, and Bulloch. This diplococcus was grown from the contents of the blebs, and was obtained as a pure culture outside of the body. After the death of the child a similar organism was found in the lungs, and minute hemorrhages were discovered in the alveoli. As this organism has been found by four independent observers in cases of acute pemphigus, there is a strong presumption in favor of its being the cause of the disease.

Unna³ has investigated the histological changes which accompany the clinical transformation of chronic pemphigus vulgaris into exfoliative pemphigus. In the latter there exists persistent vascular paralysis of a high degree, with dilatation especially of the subpapillary lymph-vessels, and oedema of the constituents of the skin, associated with softening of the epithelial elements, the latter leading to the formation of bulky deciduous scales.

In many cases the disease seems to have a neurogenetic pathology, to which point Schwimmer,⁴ Dejerine, Leloir, Charcot, and Chvostek have in particular directed attention. The first observer quoted noted during a period of four years twelve cases of pemphigus, five of which were fatal, the autopsies showing in all cases changes in nerve-tissue, in three cases cell-growth about the vessels of the posterior horns and the posterior roots. At the same time, it must be stated, changes in the spinal cord are far from being common in this disease. In three cases Petrini found no alterations, and in nine consecutive cases which had ended fatally Kaposi found in only one morbid changes here, and these were not characteristic. The lesions may be due to a vasomotor neurosis or to a tropho-neurosis. They may depend, especially in grave cases, upon deep-seated organic changes, mainly in connection with nerve-tissue. Whether the manifestation on the skin and the mucous membrane is direct or reflex is a point often difficult to determine. Leloir and some others believe pemphigus to be a reflex neurosis. It may, I believe, be either. As has been shown by observers, it may have its origin in the medulla oblongata and elsewhere in nerve-structure. Changes in the peripheral nerves, such as parenchymatous degeneration of the nerve-fibres, have been noted by Leloir, Sangster and Mott,⁵ and others. Petrini⁶ in three cases found an atrophy of the peripheral

¹ Cornil et Babes : *Les Bactéries*, Paris, 1890. See also *Internat. Atlas of Rare Skin Diseases*, Part ix., plate 26.

² *Lancet*, May 2, 1896.

³ *Op. cit.*, p. 176.

⁴ *Wiener Med. Presse*, 1890, No. 23.

⁵ *Brit. Med. Jour.*, 1888, i. p. 1273.

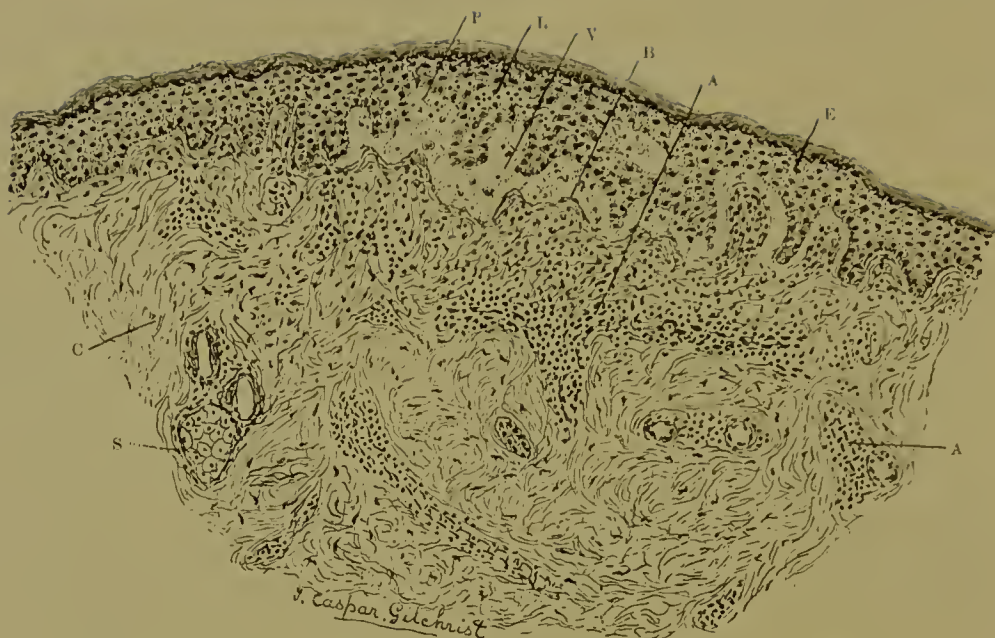
⁶ *Internat. Congress of Dermatology*, Vienna, 1892.



PEMPHIGUS.

VARIETY FOLIACEUS.

The case was that of a man advanced in years, and ended fatally. The drawing represents a section of the early (less than twenty-four hours old) bullous formation, which was excised from the abdomen. The bleb (A) is situated in the mucous layer, with the horny layer (E) and a few strata of the mucous layer (H) forming the roof, and the remaining portion of the mucous layer forming the base (B). At C the inter-epithelial lymph-spaces are widened, which demonstrates how the bleb is first produced. The contents of the vesicle consist of coagulated serum, fibrin, and numerous polynuclear leucocytes, many of which are seen migrating through the basal epidermis (B). The papillae are flattened out beneath the bleb, and the upper portion of the corium is the seat of acute inflammation, together with fragmentation of polynuclear leucocytes. The blood-vessels (V) of this same area are much dilated, and around them are large collections of polynuclear leucocytes and lymphoid cells. Magnified about 45 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)



PEMPHIGUS.

VARIETY PRURIGINOSUS.

The case, which had been followed for two years, was that of a woman who presented the features of a typical pemphigus pruriginosus, which could be controlled only by the internal use of arsenic. A small pin-head sized, clear, tense, and somewhat firm vesicle was excised from the dorsal region over the base of the thumb after having existed only forty-five minutes by special observation. There was no areola round the vesicle. The section showed that the vesicle (v) was beginning to be formed entirely beneath the epidermis (E), which was lifted up somewhat mechanically and exposed the bared papillæ (B) below. The epidermis over the vesicle was swollen, and in one place (L) showed a collection of cells which, on account of their roundish-shaped nuclei, appeared like lymphocytes, but they may have been unusual forms of polynuclear leucocytes. The interepithelial spaces also were much wider than normal, and contained a number of polynuclears with the horseshoe-shaped nucleus. The vesicle contained a few polynuclear leucocytes, nuclear detritus, some round mononuclear cells, a small quantity of fibrin, a few eosinophiles, and coagulated albumen (serous exudation). The shape of the papillæ (B) was still somewhat retained. The area of the corium (C) just beneath the vesicle and slightly beyond it showed acute inflammatory changes,—i.e., marked dilatation of the vessels (A), with emigration of polynuclear leucocytes, serous exudation, and the formation of fibrin. The appendages of the skin were not found to be affected in these sections. S represents a portion of a sebaceous gland. Larger vesicles and blebs which were excised and examined showed more advanced stages of the vesicle than have been described, as well as marked nuclear fragmentation at the base of the vesicle. Cultures from the vesicles either were sterile or showed only the usual skin cocci. Magnified about 50 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)

cutaneous nerves, thus confirming similar observations made by Quinquaud, Leloir, Dejerine, Mott, and Jarisch.

The formation of blebs along the course of nerves or arising from injury to a nerve is a well-known clinical observation. But such cases are viewed by the author as belonging in most instances to the well-defined group of diseases known as dermatitis neuropathica. The so-called "syphilitic pemphigus" (PEMPHIGUS SYPHILITICUS) is manifestly a bullous syphiloderm, due to an infection; and the blebs of lepra (PEMPHIGUS LEPROSUS) are likewise due to an infection in which the nerves are much implicated. Iodide of potassium also may produce blebs similar to those of pemphigus, likewise arsenic, quinine, and some other drugs. Cases reported under such titles as "pemphigus neuro-traumatis," "traumatic neurosal pemphigus," and the like, will be considered elsewhere, under dermatitis neuropathica.

Diagnosis.—No difficulty should be experienced in the diagnosis of a typical case. It must be remembered, however, that the mere presence of blebs does not necessarily constitute pemphigus, inasmuch as these are at times developed in other diseases, as well as by artificial means. But in pemphigus, when their appearance, together with their course, is taken into consideration, the diagnosis may usually be made without embarrassment. Such is not the case, however, when the mucous membranes are invaded before the skin, as sometimes occurs. In this event the diagnosis should not be made without due circumspection, and never hastily. I have on several occasions seen cases in which the mouth and the vagina only were attacked treated for syphilis.

So-called "pemphigoid eruptions," due to various causes, external and internal, consisting of variously sized and shaped blebs, with or without peculiar features as to number, distribution, and course, are from time to time met with. They are for the most part obscure in their origin and nature, and are difficult of classification; on account of their similarity in appearance in some cases to true pemphigus, they are generally spoken of simply as above. Bullous lesions, with or without inflammation, are not infrequently encountered in association with neuritis, especially of the extremities, occurring either spontaneously or as a result of traumatism. The blebs met with in syringomyelia and in other diseases of the cord are to be distinguished from those of common pemphigus. The most important differential diagnostic sign between the blebs of pemphigus and those of syringomyelia is that in the former disease sensibility is intact, and that symptoms of muscular atrophy are wanting.

As closely allied to and usually confounded with pemphigus, mention must be made of the bullous variety of dermatitis herpetiformis, in which blebs occur which in themselves differ but slightly from those of pemphigus. The relation of pemphigus to dermatitis herpetiformis has been already alluded to in connection with the latter disease. While

the diseases have in some cases certain striking features in common, they possess nevertheless symptoms and points which are different and of sufficient importance to render them distinct. The question that would most frequently arise would be, are not some varieties of dermatitis herpetiformis pemphigus? in answer to which it may be stated that while some of the lesions are blebs, others are of a different character, and that if the evolution of the disease as a whole be studied, including recurrences, it will be noted that the disease is generally less bullous than erythematous, vesicular, or pustular throughout its course. A disease so multiform in character should not be regarded as pemphigus. The usual type of dermatitis herpetiformis is not bullous, and therefore it should not be classed as a variety of pemphigus. In some cases, however, there may occur so close a blending of the two forms of eruption that difficulty arises in determining the question, in which event the evolution of the process may be looked upon as the safest guide to follow.

The relation of pemphigus vegetans to impetigo herpetiformis is close. Not only are many of the lesions which occur at certain stages in these diseases similar, but the general etiology and pathology are also much alike. In the case of impetigo herpetiformis referred to by the author as a personal observation, a thickened, oedematous, spongy state of the skin existed in places much like that more frequently met with in pemphigus vegetans.

The peculiar variety of erythema multiforme known as herpes iris sometimes bears a close resemblance to pemphigus. The following points of difference may be noted. Pemphigus in the adult is for the most part a chronic affection; herpes iris is acute, running its course usually in a few weeks. In pemphigus blebs may always be noted; in herpes iris the lesions are generally also vesicular. The varied colors usually present in herpes iris throughout their course are absent in pemphigus, and the surrounding skin in the latter disease is less inflamed. The vesicles of herpes iris are arranged concentrically, and increase in this manner; the blebs of pemphigus do not incline to such arrangement. The seat of the eruption in herpes iris—generally the arms, backs of the hands, and lower limbs—is characteristic; in pemphigus the disease has no seat of predilection. Impetigo contagiosa, especially in infants and children, may readily be confounded with pemphigus, and, as has been intimated by the author, doubtless many reported cases of acute pemphigus in children were in reality instances of impetigo contagiosa.

Scabies sometimes presents large vesicles and even blebs, but the concomitant symptoms and course of the disease will always distinguish it from pemphigus. The bullous syphiloderm, rare in adults, is to be diagnosed from pemphigus by the fact that it dries into bulky, greenish crusts, beneath which there exists an excoriation or an ulcer, secreting a greenish-yellow puriform fluid, mingled often with blood. Other symp-

toms of syphilis (in children as well as in adults) may usually be found in connection with the bullous syphiloderm, which will thus prevent error as to the nature of the lesion. It should be kept in mind that occasionally blebs form in urticaria (*URTICARIA BULLOSA*), and may simulate acute pemphigus; in rare instances the blebs followed by gangrene have been observed to follow the ingestion of a meal of putrid conger eel, and the like. The blebs of erysipelas can hardly be mistaken for those of pemphigus. Bullous lesions in very rare instances are met with in the course of lichen planus and ichthyosis.

It happens sometimes that blebs are produced by artificial means on the part of patients, for the purpose of feigning disease. The various stronger acids, especially nitric, dropped or painted upon the skin, cause these lesions to appear, at times, in a perfect manner.¹ Where such a cause is suspected, the patient should be placed under surveillance, when the deceit, if there be any, will generally be detected.

Treatment.—Both internal remedies and external treatment are of service, but especially the former, which must be directed against the cause. Functional disorders should be inquired into and the proper remedies employed for their relief. The case should be studied as to its etiology, after which the treatment determined upon should be enforced, and not abandoned too soon. Arsenic is by far the most valuable remedy which we possess for this disease, and in most cases acts happily. Jonathan Hutchinson² considers it in the light of a specific, and cites numerous cases where it has succeeded and only a few where it has failed to do good or to cure. In some cases it controls but does not cure the disease. It is especially effective in children and young persons; after middle life, with each decade in the age of the patient it loses some of its power to control or cure the disease. Occasionally it benefits within a few days, but in all instances its use should be continued after the eruption has ceased, to prevent, if possible, relapses and recurrences. The disease is treacherous, relapses often setting in when the outlook for restoration to health seems promising. Recurrences sometimes take place several years after the previous attack, especially in the foliaceous variety. Its employment should not be abandoned until a fair trial has been given it, for some cases are slow to yield to its influence. The doses, at first small, should be rapidly or gradually increased up to the point of tolerance. In many cases large doses are well borne. The method of using the drug by prescribing small doses repeated every two hours,

¹ A case of feigned bullous eruption in a young girl, in Guy's Hospital, London, which I was invited by Dr. Fagge to see many years ago, is called to mind. The blebs were numerous, and in appearance differed in no way from those of genuine pemphigus. The artificial nature of the lesions was, however, suspected, and observation subsequently proved that they were produced by nitric acid. I have known cases, however, in which deceit was charged which proved not to be feintitious.

² See *Med. Times and Gaz.*, vol. ii., 1875, pp. 461, 513, 565,—a valuable contribution to the subject. Also *Lectures on Clin. Surg.*, vol. i., Part i. London, 1878.

increasing the amount with every second or third dose until the system is affected, may be employed sometimes with good result. Tartarated antimony in small doses, from one-sixty-fourth to one-twenty-fourth of a grain, may be tried where arsenic is not tolerated. According to Hutchinson and others, opium is beneficial, and sometimes even curative. Antipyrin and like remedies are of much value in some cases, as the experience of Demme and others has proved. Quinine is also of value and should be prescribed in full doses, from ten to thirty grains a day, unless toxic effects are produced. Strychnine is useful, especially when administered subcutaneously, a mode of treatment in this disease to which Neisser has called attention. Occasionally diaphoretics seem to be useful. Pilocarpine is well worth trying in suitable cases. Atropine may be mentioned as having been of undoubted service in a few reported cases. Diet and hygiene should receive due attention. The food should ordinarily consist of a full animal diet, including eggs, milk, and cream. Cod-liver oil may be found of value in chronic cases. Sherwell recommends linseed meal, in ounce doses, with milk, and reports two cases cured.¹ Wine or malt may in suitable cases be directed with benefit. Rest, both physical and mental, is to be secured if possible, and everything done to make the patient comfortable in mind as well as in body.

The local treatment should always receive attention. The blebs should be punctured and evacuated as soon as they have formed. Carbolic acid proves of value in some cases, but, owing to the excoriations and the imperfections of the horny layer of the epidermis, caution must be used, lest absorption and toxic effects occur. Seeretan² records a case of pruriginous pemphigus in a man debilitated by suffering in which the lesions covered more than half the surface of the body and appeared in successive outbreaks accompanied by elevation of temperature. Compresses wet with one per cent. carbolized water not only gave almost immediate relief to the intense itching, but checked new lesions from forming, so that in four or five weeks the patient was discharged from the hospital cured. Sometimes a lotion of subacetate of lead with a little tincture of tar proves of more value than other remedies; in other cases bandages or compresses soaked in a liniment of oil and lime water, as recommended by Hillairet and Pieot many years ago, seem to allay the itching and heal the excoriations better than other applications. Washes of permanganate of potassium, of boric acid, of sulphite of sodium, and of corrosive sublimate one or two grains to the ounce, may also be employed. Ointment of oleate of mercury, from two to five per cent. strength, may be used where a stimulant is likely to be tolerated. Whatever the ointment selected, the base should be soft, and not

¹ The Use of Linseed and Linseed Oil as Therapeutic Agents in Diseases of the Skin. Arch. of Derm., Oct. 1878.

² Revue Médicale, No. 4, 1888.

stiff. Cold cream ointments, as recommended for eczema, may be prescribed and prove acceptable as bases, to which various drugs may be added. In pemphigus vegetans Neumann and Crocker speak well of salicylated cotton dressings, and also of a wash of permanganate of potassium, as originally suggested by Weber¹ and Bodenslab. *Lotio nigra*, *liquor picis alkalinus*, and the fluid extract of *grindelia robusta*, all freely diluted, used as in eczema, may likewise be employed. A simple dusting powder, as of oxide of zinc and starch, or one slightly stimulating, as salicylated starch, serves as a useful dressing where the lesions occur over a large surface and are in great numbers, and may be applied after lotions have been used.

The bath also offers an acceptable and beneficial method of treatment. In some instances a bran, starch, or gelatin bath affords relief, and Hebra has used with benefit a corrosive sublimate bath, in the strength of one-third of a grain to the pint of water; also potassa, in the form of a bath, half a grain to the pint. For grave cases the continuous bath, as recommended by Hebra, may be employed. It consists in the patient remaining in a specially prepared tub for days, weeks, or months, according to circumstances. In the tub are placed a horse-hair mattress and a pillow. The water is to be kept sufficiently warm, and changed from time to time throughout the twenty-four hours. Patients sometimes experience great relief from the bath, and they may remain in the water, eating and sleeping and living there, for an indefinite period, without in any way interfering with the general health.² The water may be medicated in the manner deemed best, according to the state of the skin. There are cases, however, in which water does not suit the skin, when bland ointments may be used, none being better than oxide of zinc and diachylon, equal parts, applied upon cloths and bound on with bandages. Pastes, glycerin-tragacanth, and glycerin-gelatins are also sometimes indicated, as in eczema.

Prognosis.—No disease runs a more arbitrary or uncertain course than pemphigus. Relapses are common. In adults the prognosis should always be considered with due deliberation. Much depends upon the character of the blebs, their number, and the rapidity of their formation. If they are flaccid, imperfectly formed, or hemorrhagic, and incline to rupture, or show soft and spongy or vegetating bases, and there are chills, the prognosis is unfavorable. When in large numbers, involving an extensive surface, and characterized by the rapidity and frequency of their formation, the result must in like manner be considered with caution. Repeated febrile attacks, together with impairment in strength, point to a serious termination. Kaposi regards the prognosis as unfavorable,

¹ Wiener Med. Presse, No. 23, 1890.

² For a detailed account of the bath and its action, see Hebra's work upon Diseases of the Skin, Trans. of the New Syd. Soc., London, vol. i. p. 320; also second German edition of the same work (1874), vol. i. p. 273.

for, according to the statistics of the Vienna General Hospital, seventeen per cent. of all cases die, and even some of the rest of those treated and relieved probably terminate fatally sooner or later. The prognosis for average, uncomplicated, ordinary cases, for the United States, however, I believe to be much more favorable, this opinion being based on reported cases, the views of members of the American Dermatological Association, and my own experience. This view is also shared by Mr. Hutchinson,¹ who has had a large experience with the disease, and states that fatal cases are rare now in Great Britain, which he attributes to the general use of arsenic in the treatment. Opinion should in all cases be guardedly expressed, for the disease is one generally indicating systemic disturbance, involving especially the nervous system, and in grave cases often ends fatally.

POMPHOLYX.

Syn., Cheiro-Pompholyx (Hutchinson); Dysidrosis (Tilbury Fox).

POMPHOLYX² IS A NEUROTIC, INFLAMMATORY, DEEP-SEATED, FLAT OR RAISED, VESICULAR, VESICO-BULLOUS, AND BULLOUS DISEASE, AFFECTING ESPECIALLY THE HANDS, ACCOMPANIED WITH BURNING, TINGLING, OR ITCHING, PURSUING AN ACUTE OR A SUBACUTE COURSE, WITH A TENDENCY TO RECUR.

Symptoms.—Under the term pompholyx and the above synonymes has been described a peculiar vesicular, vesico-bullous, and bullous disease, occupying the hands and feet, bearing a resemblance to neurotic eczema and to pemphigus affecting these regions. The disease was originally described by Hutchinson and by Tilbury Fox, these observers interpreting the manifestations differently although the same patient furnished the material for both investigators. The name cheiro-pompholyx was suggested by Hutchinson,³ but, as Robinson⁴ states, the term pompholyx is preferable, because the feet as well as the hands may be affected. A number of cases have from time to time been under my observation, and I long ago⁵ satisfied myself clinically that the affection was not specially connected with the sweat apparatus. At the same time, it may be remarked, there occur cases in which the sweat apparatus is disturbed

¹ Loc. cit., and Archives of Surgery, vol. v. p. 4.

² The term pompholyx is derived from *πομφώλιξ*, a bubble. It was applied by Willan to pemphigus, but fell gradually into disuse until employed with the prefix "cheiro" by Jonathan Hutchinson to designate the disease under consideration. As this disease always attacks the hands, the feet being much less frequently involved, cheiro-pompholyx is a fitting name for most cases, but pompholyx is broader in its scope.

³ A portrait representing a severe, bullous form of the disease has been given by this observer in his Illustrations of Clinical Surgery, Plate x., p. 49. London, 1875. Tilbury Fox portrayed the "sago-grain like" vesicular form, that usually met with, in his Atlas of Skin Diseases. Philadelphia, 1876.

⁴ Archives of Derm., vol. iii., 1877.

⁵ See third edition of my Practical Treatise on Diseases of the Skin. Philadelphia, 1882, p. 247.



POMPHOLYX.

VESICULAR VARIETY.

The subject is a girl, thirteen years of age. The disease affects the palmar surface of the hand and fingers, in the form of pinhead- and pea-sized vesicles, some of which are flat and deep-seated, while others are raised or excoriated. Some are grouped. Duration of present lesions five days. (Dr. A. R. ROBINSON'S case, from a colored photograph.)



POMPHOLYX.

BULLOUS VARIETY.

The subject is a girl, thirteen years of age. Four blebs, varying in size from a quarter of an inch to one inch in diameter, exist on the sole of the foot. Vesicles exist on the hands. Duration of existing lesions, five days. New lesions continued to appear successively for several weeks. (Dr. A. R. ROBINSON'S case.)

simultaneously with the vesicular and bullous eruption, thus complicating the disease. There also occur cases in which hyperidrosis exists as an accompaniment. It begins with burning and tingling, followed soon by the development of deeply embedded vesicles, which occur singly or in little groups, seated on the palms and flexor surfaces and sides of the fingers. It occupies usually the palmar and plantar surfaces, but may also make its appearance somewhat on the backs of the fingers and hands, and I have seen it on several occasions extend itself to the wrists and even to the forearms. It is of much more frequent occurrence on the hands than on the feet. Sometimes both regions are simultaneously affected. It is usually symmetrical, but one hand is generally worse than the other. The lesions in the early stages, at first clear and later turbid, have much the appearance of being seated in and about the sweat ducts, and indeed of being minute droplets of sweat under the epidermis, and as they become larger and older they resemble boiled sago-grains embedded in the skin, and often show a darkish point in the centre. Signs of inflammation, variable in degree, including erythematous œdema, with burning, itching, more or less pain, and stiffness of the skin, now become far more marked, in some cases the process advancing until blebs take the place of the vesicles, or the vesicles multiply and the exuded fluid spreads out beneath the horny layer, which it undermines, so that the greater part or the whole of the horny layer may be raised up. I have noted that the blebs tend to assume the shape of the particular locality invaded; thus, on the sides of the fingers they incline to be flat, and in the palm to be semiglobular. The disease is frequently more vesicular than bullous. The vesicles and the smaller blebs do not rupture spontaneously, so that the contents are partly absorbed, the epidermis being thrown off in small or large pieces, sometimes as a broken cast of the fingers or palms, as in dermatitis exfoliativa. The blebs are frequently formed by two or more vesicles becoming confluent, multilocular lesions thus being constituted. The epidermis beneath is red and tender, but gradually hardens after the inflammatory process has ceased. Together with the local manifestation signs of general disturbance are frequently present, including malaise, chilliness or shivering or alternate hot and cold sensations, and various other nervous symptoms, including depression of spirits and anxiety. This is the usual course of an average case. Some are milder in type, the eruption not advancing beyond the vesicular stage. In most cases, however, the bullous formation is pronounced, blebs, discrete or confluent, forming, so that the disease may be difficult to distinguish from pemphigus. It may thus be a mild or a severe disease. The cutaneous symptoms vary much with the gravity of the attack. The process, however, often advances to the bullous stage, and runs a course with more or less typical lesions, lasting usually several weeks, but sometimes as many months. The disease tends to disappear spontaneously, but its

course is often protracted. The nails usually show transverse furrows after an attack. It is not eczematous, and does not incline to run into eezema. It tends to relapse, and also to recur.

Etiology.—The disease is met with in both sexes, usually in young adults or in middle-aged persons who are in a depressed state, often the result of mental strain, as, for example, in those who are over-worked or are harassed mentally, and who may show varied nervous phenomena. It is a distinctly neurotic manifestation,—a neurosis. It may be regarded as one of the rarer diseases of the skin.

Pathology.—Concerning the pathological anatomy, which has been studied by Tilbury Fox,¹ Crocker,² A. R. Robinson,³ Williams,⁴ Santi,⁵ and others, a difference of opinion has been expressed, especially as to the part played by the sweat apparatus. Robinson found the vesicles to be seated primarily near the top of the mucous layer and over the papillæ, and was unable to find any connection with sweat ducts and glands. Crocker also found that the vesicles formed in the mucous layer sometimes high up, at other times low down. They were sometimes in the line of the sweat duct, which could be seen leaving the vesicle, and were, therefore, in the interpapillary layer; but in no case was the sweat gland inflamed. The papillæ near the vesicles were infiltrated with leucocytes, the main feature of the inflammatory process being that exudation was generally confined to the papillary layer. The investigations of Williams and Santi in particular have demonstrated that the vesicles are not related to the sweat pores. According to Williams, in the cutis neither fibrin nor leucocytes are found, but the lymph in the epidermis is very rich in fibrin. It may be stated that it is a neuritic inflammatory disease, involving especially the epidermis and papillary layer, the sweat apparatus being sometimes also more or less involved secondarily or as a complication. It is of a neurotic nature, having its origin in the nervous system, probably in nerve-centres, as shown by the symptoms and its course.

Diagnosis.—It may be confounded with vesicular eczema, and with pemphigus; in the later stage it may resemble dermatitis exfoliativa (to which it is allied as concerns its general pathology). It is a disease *sui generis*. From pemphigus it differs in being localized, and in beginning as a vesicular affection accompanied by exudative symptoms of a diffused type, the whole papillary layer of the affected area being more or less implicated, as shown by the character of the desquamation. It is allied to pemphigus vulgaris in being, like it, a manifestation of a depressed nervous system. Sometimes the small vesicles and their arrangement bear a resemblance to scabies.

Treatment.—The treatment should be directed towards improving

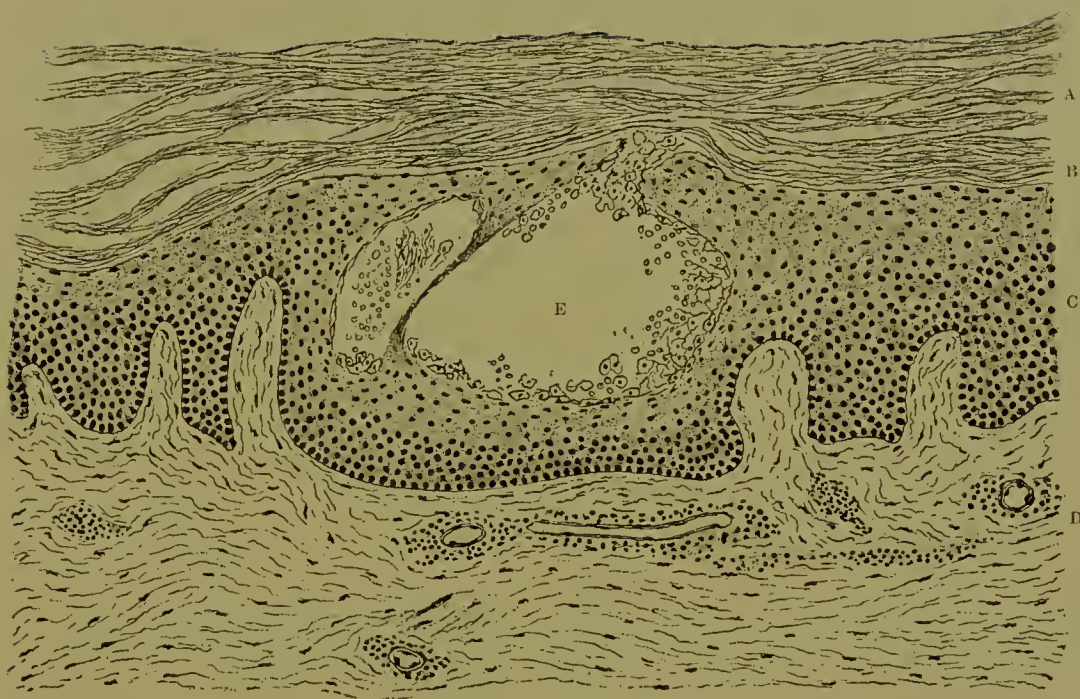
¹ Path. Trans., vol. xix. (1878) p. 264.

² Op. cit., p. 200.

⁴ Brit. Jour. of Derm., Oct. 1891.

³ Archives of Derm., vol. iii. (1877) p. 289.

⁵ Monatsh. für prakt. Derm., Bd. xv. p. 93.



POMPHOLYX.

The drawing shows the vesicle in an early stage of formation. A is corneous layer ; B, stratum lucidum ; C, mucous layer ; D, corium ; E, vesicle. The corneous layer shows lacunæ formed between strata of the corneous cells. Sometimes these are caused by escaped sweat, at other times by excessive moisture of this layer from transudation from papillæ. A similar condition is seen in the palm of the hand in other inflammatory diseases, as in neuritic vesicular eczema. The stratum lucidum is ruptured at a point above the vesicle ; this condition is also noted in neuritic vesicular eczema. The vesicle is formed in the upper two-thirds of the mucous layer, and consists of serum from the underlying papillary blood-vessels. This, passing between the cells of the mucous layer, first causes degeneration of a few cells and pushes the others aside, flattening them to form the wall or bands which pass through the vesicle and may divide it into compartments at the earliest stage. When the bands are broken a single compartment results. The fluid of the vesicle is alkaline or neutral, never acid. Later, leucocytes invade the lesion and the contents become opaque. The papillæ are slightly œdematous, and the blood-vessels are dilated, with some perivascular infiltration. The upper part of the corium shows slight inflammatory changes with perivascular cell-infiltration. (Dr. A. R. ROBINSON'S section, drawing, and description.)

the general condition of health, especially with the view of aiding the recuperation of the nervous system. Rest, mental and physical, is generally demanded, together with such remedies as iron, quinine, strychnine, and ergot. The author has much more faith in the efficacy of internal remedies and hygiene than in local applications, though of course the latter are important and are always demanded, because of the local symptoms. Relapses in particular are to be guarded against by improving the general condition of health. Locally, weak, mildly stimulating or astringent lotions, as diluted black wash, weak compound zinc sulphide lotion, or a weak salicylic acid paste, as in the case of erythematous and vesicular eczema, are useful. Boric acid, acetanilid, and similar remedies are also serviceable. Strong applications are not tolerated. Under favorable conditions relapses and recurrences are liable to occur, usually at variable intervals, it may be every few years, as in several cases that have long been under my observation.

HERPES SIMPLEX.

HERPES SIMPLEX IS AN ACUTE INFLAMMATORY, NEUROTIC AFFECTION, CHARACTERIZED BY ONE OR MORE CLUSTERS OF GROUPED VESICLES UPON AN ŒDEMATOUS, INFLAMED BASE, ACCOMPANIED BY HEAT AND BURNING, OCCURRING ESPECIALLY UPON THE FACE AND THE GENITALIA.

Symptoms.—The term herpes is derived from the Greek *ἔρπειν*, to creep, having originally been applied to *tinea trichophytina* (common ringworm), as well as to one phase of *erythema multiforme* (herpes iris), in both of which diseases there occurs a peculiar arrangement of the lesions, usually vesicles, in the form of clusters or groups. Latterly, the name herpes has been used to convey the idea of an eruption characterized by grouped vesicles, of which herpes zoster was the type. Herpes simplex and herpes zoster when typically developed are both characterized by grouped vesicular lesions upon an Œdematous, more or less inflammatory base. Both are neurotic diseases. Herpes simplex is often preceded by symptoms of malaise and pyrexia, and sometimes by rigors, and may occur either alone or in the course of certain febrile diseases, as pneumonia. The vesicles usually appear in the form of one or more small clusters, which when close together may coalesce and form a patch. They are usually few in number, often not more than a half-dozen, and sometimes only three or four. In rare instances they may be more numerous and even generalized. They are pin-head to small split-pea sized, and contain at first a clear serous fluid, which becomes puriform and desiccates into small yellowish or brownish crusts. If rubbed or pricked, an excoriation, usually superficial, takes place, which cicatrizes without leaving a scar. The appearance of the vesicles is generally preceded by a feeling of heat in the region, together with more or less swelling and tension. It is an acute disorder, seldom having a duration of more than a week. It may appear upon any region, and the

mucous membrane is also very frequently invaded. There are three special regions, however, in which it is prone to show itself, from which circumstance the terms herpes "facialis," "labialis," and "genitalis" (or "progenitalis") have arisen. It manifests a distinct tendency to recur, whether upon the skin or the mucous membrane, and upon one or another region.

HERPES FACIALIS.—This may occur upon any part of the face, although it is commonly encountered about the lips, and especially on the border of the vermilion; hence the name **HERPES LABIALIS**. It is frequently seen upon the alæ of the nose; more rarely upon other regions of the face, and on the auricles. The lesions may appear in the form of crops, and on the face are liable to be mistaken for vesicular eezema. They are usually bilateral, and occur in disseminated little groups. They may remain single, or may coalesce, forming a vesicular patch, which terminates in a brownish crust. No ulceration takes place, and consequently no scars result.

The mucous membrane of the mouth, and the tongue (**HERPES LINGUALIS**), are also not infrequently invaded. Here the vesicles rupture early through maceration, and therefore are seldom observed as vesicles, but rather in the form of excoriated patches. Upon the lips the vesicles are usually small, few in number, and often confined to a single cluster. The upper lip is most frequently affected. The subject of rigors in connection with labial and lingual herpes is worthy of remark. There is no doubt that herpes labialis and herpes lingualis especially are often symptomatic of a rigor. Not infrequently a rigor occurs, due, it may be, to malaria, to a urethral operation, or to excessive fatigue, followed by sweating and on the second or third day by herpes.

Herpes facialis is usually caused by some febrile or nervous disturbance of the system; hence "herpes febrilis," one of the names it is known by. It is also popularly termed "cold sore," and, occurring in the mouth, "canker sore." It is seen in connection with digestive disorders and colds, especially the latter, and also attending more serious diseases, as intermittent, typhoid, and other fevers, but it does not occur with all kinds of fever. Thus, it is rare in relapsing fever. Sémon¹ watched an epidemic of relapsing fever in Berlin in which rigors were constant, frequent, severe, and of long duration. One hundred and sixty cases were observed. Assuming only one relapse and one rigor in each attack, this would amount to three hundred and twenty rigors, but in reality there were many more, yet herpes labialis occurred in only four instances, and these were not severe. Herpes simplex is frequently met with in pneumonia, especially upon the lips and the borders of the nostrils, but also on other parts of the face, on the genitalia, and on the general surface. Its frequency is variable. It was present in forty-three per

¹ Jour. of Cut. and Ven. Dis., vol. ii. (1884) p. 146.



HERPES SIMPLEX.

The lesions, occupying the lips and cheeks, are typical herpetic vesicles, discrete and confluent, in an early stage, before crusting has begun. Duration four days. Slight febrile disturbance; first attack; cause unknown. The subject is a girl ten years of age. The tendency of the vesicles to group and to coalesce is marked. (Dr. HENRY W. STELWAGON'S case.)

cent. of Bleuler's cases; in forty-three per cent. of Geisler's 421 cases; in only seven per cent. of Townsend's cases; in all of Kissel's cases in the Oberlahnstein epidemic of 1847; and in twenty-six per cent. of E. F. Wells's 498 cases.¹ Court² has called attention to a special type of fever with herpes labialis, with pyrexia, headache, and gastric disturbance and vomiting. The eruption appears on the third or fourth day and lasts six or seven days the disease thus occupying from nine to twelve days. The attack is frequently but not invariably accompanied by pneumonia, but not of the common type, the usual stages not being marked. Such cases run a very definite course, with a favorable prognosis. It is also often met with in malaria.

Instances of HERPETIC FEVER, consisting in typical cases of sudden advent of fever, sometimes as high as 104° F., preceded by malaise, vomiting, chilliness, and then a rigor, followed by an outbreak of herpes simplex, confined to the face or widely distributed, the attack usually being of short duration, are occasionally met with. A notable instance of the kind is recorded by G. H. Savage,³ which occurred in thirty-nine boys in an institution (EPIDEMIC HERPETIC FEVER). There were marked constitutional disturbance, with chilliness and a rigor; moist, coated tongue; sore throat and swollen glands; temperature from 102° to 104° F. on the first day; and a herpetic vesicular eruption on the face, especially on the lips and the auricles. The attack lasted four days.

Attacks of herpetic fever of this type are probably of an infectious nature, and they may simulate other diseases. The causes to which this variety of herpes is due exert a disturbing influence on the nervous system. Lagout, of France, regards herpes as an eruptive fever. Complications sometimes occur with herpetic lesions, particularly hemorrhage and gangrene, causing "black herpes" of the lips, as seen occasionally in parturient women. There is probably a relation between such manifestations and dermatitis herpetiformis and impetigo herpetiformis in the parturient state. The author has always insisted on the neurotic nature and the herpetiform character of dermatitis herpetiformis, and that for this reason the adjective herpetiform is more appropriate than any other to characterize this disease.

Sometimes herpes occurs so widely distributed over the surface as to be worthy of the name "generalized," a form to which French writers in particular have called attention (HERPES GÉNÉRALISÉE). In my experience this form is rare.

Facial herpes, and especially labial herpes, differs from herpes zoster in the presence of fever, which is wanting in zoster. In herpes labialis neuralgic pains are absent, and the vesicles are usually bilateral. Zoster, moreover, generally occurs alone, whereas labial herpes is in most cases

¹ Quoted from Wells's article on "Pneumonic Fever—its Symptomatology." Jour. Amer. Med. Assoc., May 26, 1894.

² Lancet, Jan. 2, 1892.

³ Jour. Cut. and Ven. Dis., 1883, p. 253.

a symptom of some general disease. Recurrent herpes lingualis in syphilis—occurring usually in the form of pin-head sized erosions on the side of the tongue, lasting from one to two weeks—is not, as a rule, a syphilitic manifestation.

HERPES GENITALIS.—This form (called also **HERPES PROGENITALIS**) occurs upon the genitalia of either sex. Certain localities are attacked in preference. In the male it is observed upon the prepuce, especially on the inner surface, which occurrence has given rise to the term **HERPES PRÆPUTIALIS**. It occurs also frequently upon the glans, but rarely upon the integument of the penis, and seldom on the scrotum. According to F. B. Greenough's statistics,¹ the parts most liable to be affected are the sulcus, the reflected mucous membrane of the prepuce, the glans, the margin of the prepuce, and lastly the skin on the shaft, the regions being mentioned in the order of the frequency with which they are attacked. The eruption usually follows the course of the ramus dorsalis penis nerve. In the female it may show itself upon the inner aspect of the labia majora and on all parts of the labia minora, the orifice of the urethra, the clitoris, and the prepuce, and upon the skin of the vulva. It is essentially a disease of youth and early middle age. It is seldom encountered after the age of fifty. The attack is usually preceded by a feeling of uneasiness or burning, accompanied by congestion and more or less œdema. This is soon followed by one or more small groups of vesicles, more or less perfectly formed, seated upon an inflamed area, which may or may not be accompanied by a marked areola. The number of lesions varies. They are rarely less than three or four in number or more than ten or twelve. In size they vary from a pin-head to a small pea, and when multiple are apt to coalesce. They pursue a benign course, and, unless irritated, incline to heal in from five to ten days. As a rule, only one cluster is seen. When the eruption is fully developed the smarting and burning sensations are at times marked and in other cases insignificant. There may be swelling of the inguinal glands. Sometimes pain is present, and it may be severe, involving the sacral plexus of nerves, and itching, especially in women, may be a notable symptom. Neuralgic pain may precede as well as accompany the eruption in either sex. Mauriac² has described such cases, some of which, however, might be more properly viewed, in the opinion of the author, as herpes zoster. The line separating herpes simplex from herpes zoster is at times ill defined. Some cases might with propriety be classed with either disease. This is more notable in women than in men. In some cases the vesicular lesions, instead of remaining discrete, coalesce, forming small or large patches (**CONFLUENT GENITAL HERPES**). Most

¹ Archives of Dermatology, Jan. 1881.

² Leçons sur l'herpès névralgique des organes génitaux. Paris, 1877. See also Bumstead and Taylor on the Pathology and Treatment of Venereal Diseases, 4th ed., Phila., 1879.

of such cases are probably instances of herpes zoster. They are generally accompanied by considerable constitutional disturbance. The vesicles frequently run together and form small patches, which become crusted. Upon the inner surface of the prepuce and upon the inner surface of the labia the vesicles generally break down and result in excoriations covered with a whitish deposit.

Concerning the cause of the affection, it may be stated that it is due to excessive genital irritation of one kind or another. The subjects of this form of herpes very often give a history of venereal disease. It may follow local uncleanness, balanitis, gonorrhœa, chancreoid, or chancre. Herpes in married women who may be attacked with chancre or gonorrhœa, however, is uncommon. Venereal and alcoholic excesses, and especially all manner of congestions of the genito-urinary tract, are well-known causes. In women it is particularly common in prostitutes, as Fournier, Bergh, and Unna have pointed out. It is also very common in connection with menstruation (*HERPES MENSTRUALIS*), as Bergh in particular has shown. It both precedes and accompanies this function. Some women are much annoyed by its very frequent occurrence. The cause here, congestion of the genital tract, is unlike yet somewhat analogous to that in prostitutes. It is met with in young and in middle-aged women, and may occur at long or short intervals.

Occurring upon the localities just mentioned, the affection is especially liable to be mistaken for one form or another of venereal disease. The lesions are occasionally much like those of chancreoid, and great care in these cases is necessary in order to make a correct diagnosis. The course of herpes, however, generally enables the observer to come to a definite conclusion upon this point. A week or ten days will suffice to determine the question, for within this time herpes will have usually disappeared spontaneously, whereas a venereal ulcer probably will have increased in size. The affection may also be confounded with simple erosions on the glans. It may also be mistaken for the initial lesion of syphilis, but this is not likely if an expectant treatment be substituted and sufficient time be allowed to elapse. Where there is doubt, ample time should in every instance be allowed to pass before pronouncing positively upon the nature of the affection. This remark applies with equal force to all suspected syphilitic lesions. Herpes genitalis is exceedingly prone to recur repeatedly throughout life, and sometimes periodically. Very frequently it will be found to have been preceded by the act of coitus, not appearing, as a rule, until the second or third day after. In some instances each coitus is followed by herpes, especially in neurotic subjects. Its tendency to relapse is marked. With reference to this peculiarity, Doyon¹ considers the disease under the name of "relapsing herpes."

¹ *L'herpès récidivant des parties génitales.* Paris, 1868.

Pathology.—The lesions are dependent upon nerve-irritation emanating in the nervous centres, or are produced through reflex action. The disease is an acute, self-limited, localized peripheral neuritis involving the superficial cutaneous nerves. The course of the inflammation is rapid, sometimes remarkably so. The irritation upon the nerve centres may be simple (as cold and fatigue) or specific (as in fevers).

According to Unna's investigations, in herpes genitalis the process consists of a true coagulation necrosis of the upper prickly layer. The epithelial cells have become necrotic, the protoplasm has given up its normal staining capacity, and, by taking up fibrinogenous substance from the fluid surrounding it, has undergone a transformation into a coagulated mass. The process is a fibrinous inflammation of the epidermis. At the same time the epidermis loosens as a whole from the swollen papillæ, and, as the exudation advances, there develops a sub-epithelial bleb, whose covering is formed from the layers of the necrotic prickly layer, and whose walls and contents likewise undergo coagulation necrosis.¹ Pfeiffer was not able to find in the vesicles of herpes labialis the protozoa-like bodies met with in herpes zoster.

Treatment.—The lesions should be guarded especially from all irritation, and a powder or an ointment used to protect them from excoriation. Antiseptic powders, such as acetanilid and aristol, are to be selected. Lotions of diluted ammonia water and of lead water, and spirit of nitrous ether, are serviceable. Strong alcohol is particularly valuable, especially as an abortive remedy. One of the best soothing and drying lotions, one that I have employed for many years, consists of the following :

℞ Zinci Sulphatis, ℥i-℥i;
Potass. Sulphidi, ℥i-℥i;
Aquæ, fʒvii;
Alcoholis, fʒi.

M.—Sig. Shake, and apply freely and frequently.

To this lotion a larger proportion of alcohol may be added. Bathing the parts with a saturated solution of boric acid or with solution of chlorinated soda, and dusting with calomel, are both useful in herpes of the genitals, and borated cotton is a good simple dressing. Silver nitrate and carbolic acid may be applied in some cases to excoriated lesions, while dressings of corrosive sublimate 1 to 3000, or of resorcin or carbolic acid fifteen grains to the ounce, are of service. As a prophylactic measure sometimes beneficial, circumcision in the male, where indicated, may be practised. The avoidance in either sex of all factors that tend to cause congestions of the genital tract is to be especially insisted on. Arsenic is of positive value in most forms of recurrent herpes; it will in some cases keep recurrences in check, and may even cure the tendency to herpetism.

¹ Op. cit., pp. 146, 147.

HERPES ZOSTER.

Syn., Zona; Cingulum; Ignis Sacer; Zoster; Shingles; Girdle Disease; *Germ.*, Gürtelkrankheit; Feuergürtel; *Fr.*, Zona.

HERPES ZOSTER¹ IS AN ACUTE, NEUROTIC, INFLAMMATORY DISEASE, CHARACTERIZED BY SMALL OR LARGE GROUPS OF VESICLES SITUATED UPON OEDEMATOUS, INFLAMED BASES, ACCOMPANIED BY HEAT, BURNING, MORE OR LESS HYPERÆSTHESIA, AND NERVE PAIN.

Symptoms.—The disease generally commences by slight or marked, usually the latter, nerve-pain, which in most cases is experienced for several days before any eruption shows itself. Hyperæsthesia also exists. Pain and hyperæsthesia are two important symptoms of herpes zoster. Sometimes there occur general premonitory symptoms, such as loss of appetite, nausea, and headache. In some cases febrile symptoms, slight or marked, are present. Kaposi states that in rare cases pains may exist for as long as from three to six weeks preceding the outbreak. Cases of this kind I have never met with. Pain may be diffused over the whole of the region about to be attacked or localized to one or more points. On the other hand, occasionally it is altogether wanting, not only in children but even in adults. It is generally sharp, especially in adults and elderly persons, and involves both the deeper and the more superficial structures of the region, and in most cases in a manner altogether disproportionate to the amount of eruption which follows. The skin in a day or two shows erythematous inflammation, the color being pale raspberry-red which gradually deepens, usually in the form of several ill-defined patches, attended with heat or burning sensations, and later groups of inflammatory papulo-vesicles. They soon become vesicles, and are of the size of pin-heads and small split peas, usually discrete but clustered, and are situated, as a rule, on a highly inflamed surface. Sometimes they are crowded together, forming irregularly shaped patches. The vesicles continue to appear, sometimes one group after another, until from the sixth to the twelfth day, when the eruption is usually at its height; it remains in this condition for a day or two and then decreases, the vesicles drying up with brownish crusts. These by degrees drop off, leaving in almost all cases scars, more or less pronounced according to the severity of the attack. The vesicles do not burst as in eczema, but remain intact throughout their course. At first they contain a clear, yellowish fluid, which, as the disease progresses and begins to decline, gradually turns cloudy and becomes puriform. When at its height, the eruption is generally perfect in its anatomical characters, the vesicles being well defined, fully distended, with translucent,

¹ The word zoster is derived from ζώνη, a girth; in the Iliad, always a waist-belt. Zona is derived from ζώνη, a girdle, a waist-band. The word shingles is probably a corruption from cingulum, a girdle, a zone.

yellowish contents, seated upon a markedly inflammatory diffuse patch of skin.¹

The lesions always tend to group, and are usually crowded together. The groups are irregular both in size and in form. As a rule, they are elongate or ovoidal rather than circular. Their number is exceedingly variable. Occasionally only one exists, while in other cases there may be a half-dozen or more. In almost all cases at least two or three exist. Where the disease is extensive or confined to a small area, they may be so crowded as to form one or several patches. But usually they are more widely distributed, and sometimes they are far apart. Some of the groups, those that appeared first, are generally more fully developed than others; those that were last to appear, as a rule, do not become typically formed, so that the eruption may often be seen in its several stages. Irregularity in the distribution of the eruption is not uncommon. Thus, in some cases the patches are so widely separated from one another as to appear to be disconnected in origin. Even when the lesions are manifestly seated over well-known nerve tracts the groups are frequently much scattered, with variously sized areas of sound skin between them. The cutaneous lesions in some cases do not follow the distribution of any special peripheral trunk or nerve. This subject will be referred to again. The points at which they first show themselves are in almost all cases those which are the most markedly affected throughout the course of the disease. The eruption inclines to spread from the points or areas at which it first appeared to other parts, but not by contiguity. The vesicles tend to coalesce, but the patches do not show this tendency, unless close together. In rare, anomalous instances the distribution may be in the form of streaks and angular patches, as occurred in a case depicted by Neumann.²

The disease in almost all cases runs an acute course, lasting generally from ten days to three weeks, according to the severity of the attack, from the beginning to the end. In the graver cases, especially where the disease is ulcerative, gangrenous, or hemorrhagic, the duration may be longer, occasionally as long as two or even three months. It is usually characterized by well-marked symptoms, which make it one of the most distinctive of the skin diseases. Sometimes, however, it runs an irregular or abnormal course, the above symptoms being only in part present. The vesicles may not be fully formed, appearing as imperfect vesicles, or as papulo-vesicles; occasionally there may be merely an erythema, or, more frequently, papules; on the other hand, small blebs and pustules may exist. In severe zoster some of the lesions, or even entire groups, may be more or less hemorrhagic, in which case they

¹ See the author's *Atlas of Skin Diseases*, Plate R, and the *Atlases of Hebra and Crocker*, representing in color the common forms of the disease. In Hebra's *Atlas* there is also a portrait of a bilateral herpes zoster of the face.

² *Atlas der Hautkrankheiten*, Lief. vii. Taf. x.

are bluish, purplish, or blackish (HERPES ZOSTER HÆMORRHAGICUS). Where the disease assumes a virulent type, especially in elderly persons, it may be followed by sequelæ in the form of persistent and painful neuralgia, want of sensibility in the affected part (anæsthesia, anæsthesia dolorosa), local paralysis, more or less atrophy of the muscles, and falling of the hair (alopecia) or teeth. Thus, the symptoms may be motor as well as sensory. A number of such cases have been collected by Strübing.¹ Instances of paralysis following zoster, however, are rare. A few cases have been observed in which the paralysis preceded the eruption, as reported by Duncan.² Zoster of the orbital region is particularly liable to be followed by sharp neuralgic pain, lasting sometimes months or even years, and later by anæsthesia. Sometimes the eye becomes involved, first in the form of a corneal inflammation and secondarily as an iritis, the process occasionally terminating in loss of sight or even in death. On the other hand, cases are frequently met with in which the whole process is checked in its course just as the distinctive symptoms upon the skin are about appearing. These constitute "abortive zoster," and are more frequently met with in children than in adults. In rare instances cases of "herpes zoster without eruption" are met with, as in a case reported by James Mackenzie.³ Of course, strictly speaking, there can be no zoster without an eruption, but cases occur in which the pain, its seat and its course, are those of herpes zoster, and there is no reason to doubt that the disease producing it is the same as that which in other cases gives rise to the eruption.

The pain varies in intensity; at times it is slight, in other cases it is exceedingly severe. In children, in mild cases, it is often insignificant. In elderly adults or old persons it is usually severe. As a rule, it is in the ratio of the age of the individual. It is most severe when the head is attacked. The amount of eruption is seldom proportionate to the pain. In rare cases the disease is accompanied or followed by itching rather than pain.⁴ The author has noted this peculiarity accompanying the eruption particularly in superficial recurrent zoster.

REGIONAL FORMS OF HERPES ZOSTER.

The disease attacks various regions of the body, but has decided preference for certain parts, and frequently occurs over the course of well-known nerve-tracts. There are, however, exceptions to this statement. This subject will be referred to again. It is almost invariably unilateral. In rare instances, especially about the head and face, as F. Hebra showed, but likewise on the trunk, it is bilateral. J. Jamieson⁵

¹ Deutsches Archiv für Klin. Med., Bd. xxxvii., October, 1885.

² Jour. of Cut. Med. London, 1868, p. 242.

³ Some Points bearing on the Association of Sensory Disorders and Visceral Disease. Brain, Part III., 1893, p. 321.

⁴ See reports of cases in Brit. Med. Jour., vol. i., 1883, pp. 139, 290, 339.

⁵ Australian Med. Jour., May, 1877.

records a case of bilateral herpes zoster in which the face, neck, and arms were all attacked simultaneously. Such cases are very rare, but mild forms of the disease occurring bilaterally are not so rare as was formerly supposed.

According to the region upon which the disease shows itself, it is termed ZOSTER CAPILLITII, Z. FACIEI, Z. OPHTHALMICUS, Z. NUCHÆ, Z. COLLI, Z. BRACHIALIS, Z. PECTORALIS, Z. ABDOMINALIS, Z. FEMORALIS, and the like. To express the precise locality invaded, other terms indicative of the anatomical region are also employed, as, for example, CERVICO-BRACHIALIS, DORSO-PECTORALIS, CERVICO-SUBCLAVICULARIS, OCCIPITO-COLLARIS, DORSO-ABDOMINALIS, LUMBO-INGUINALIS, LUMBO-FEMORALIS, SACRO-ISCHIADICUS, SACRO-GENITALIS, etc. Upon the head it is encountered both on the scalp (Z. CAPILLITII) and on the forehead (Z. FRONTALIS). The eruption in the latter region usually makes its appearance over the course of the supra-orbital nerve, passing upward over the scalp. The face is not infrequently invaded, the side of the nose and other localities being the seat of the disease. Occasionally it makes its appearance in the mouth and on the gums.

J. Zeissler¹ records a case in which the anæsthesia following the disappearance of a herpes zoster frontalis was so distinct that the insertion of a needle deep into the skin caused no pain. At the same time the patient complained of severe itching and burning in the area invaded. The condition persisted for many months, rebellious to active treatment. Kopp² records a case of zoster involving the left side of the face, in which seventeen attacks had occurred in a period of five years, producing scarring so marked as to suggest the scars of variola. In a number of the reported cases of recurrent zoster it will be found that traumatism had preceded the eruption, and that some of them were bilateral, as M. B. Hartzell³ has pointed out.

The eye is liable to become involved (Z. OPHTHALMICUS), and the pain is sometimes very severe. There are generally much nerve pain, injection of the conjunctiva, and in some cases inflammation of the cornea and iris with considerable disturbance of sight, followed by profound disturbance or even disintegration of the organ, together sometimes with meningitis and a fatal ending. The subject has been studied by Hutchinson,⁴ Hybörd,⁵ and others. When the nasal branch is attacked and the eruption runs down the side of the nose and on to the cheek, the eye is usually affected, first as an inflammation of the cornea, and secondarily in the form of iritis. The other eye may be sympathetically involved. Occasionally, even in grave cases, the eyes escape much damage. Thus,

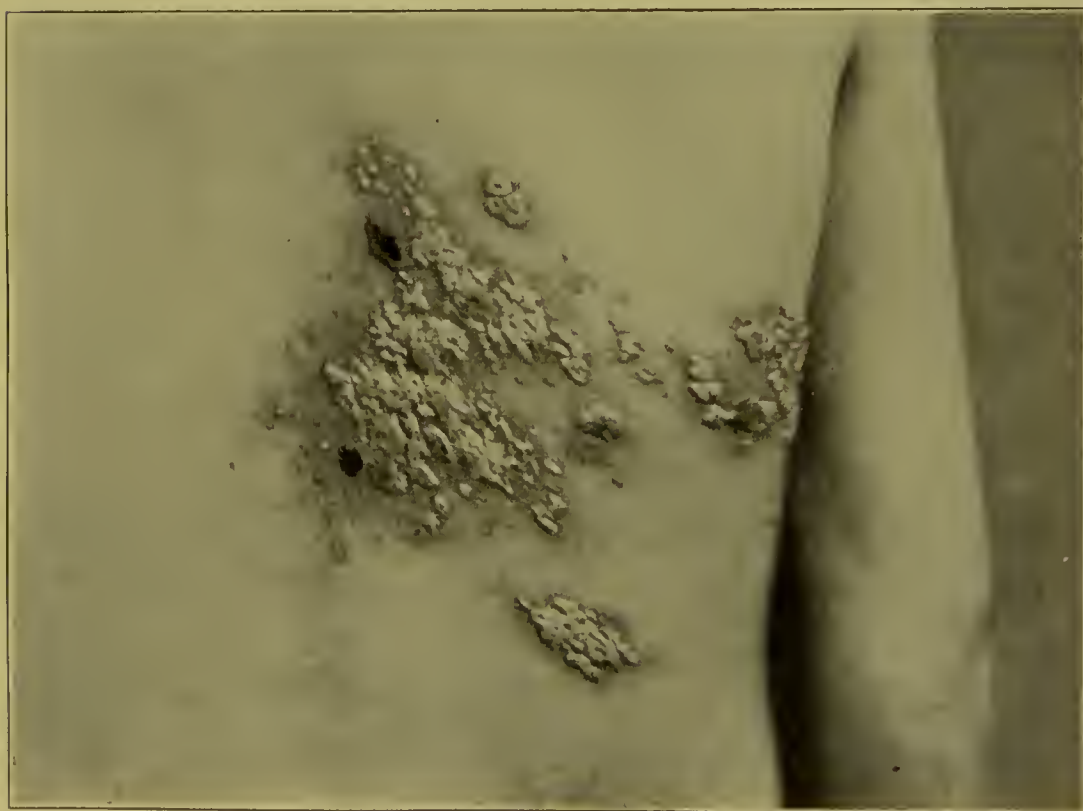
¹ Trans. Amer. Derm. Assoc. for 1889.

² Trophoneurosen der Haut, p. 101. Wien, 1886.

³ Amer. Jour. Med. Sci., April, 1890.

⁴ Ophthalm. Hosp. Reports, 1866, p. 166.

⁵ "Du zona ophthalmique." Thèse de Paris, 1872.



HERPES ZOSTER.

VARIETY DORSO-PECTORALIS.

The two pictures, anterior and posterior aspects, represent the same individual. Duration ten days. The commonest form of the disease, and an average well-marked example, one lateral half of the trunk being invaded. (Dr. GEORGE HENRY FOX's case.)



HERPES ZOSTER.

VARIETY CERVICO-BRACHIALIS.

The lateral aspect of the neck, and the clavicular and brachial regions, are involved. Duration nine days. The vesicles are at the acme of their development, crusting being nearly ready to begin. (Dr. GEORGE HENRY FOX's case.)

Robertson¹ reports an atypical case of bilateral herpes ophthalmicus occurring in the course of chronic pneumonia with diffuse interstitial nephritis. The herpetic eruption was ushered in without pain or much itching, and ultimately involved the whole face in patches. There was considerable cutaneous disturbance, with closure of the eyelids. The lesions were peculiar in that they were bullous and pustular as well as vesicular, all three forms occurring simultaneously, and on the third day broke down into foul ulcers discharging freely. The attack lasted three weeks. No ocular symptoms of gravity appeared.

The auricle may also be attacked (*Z. AURICULARIS*). The eruption may also begin at the back of the head, spreading forward and occupying the whole side (*Z. CAPILLITII*). The face alone (*Z. FACIÆ*), especially the cheek, may also be involved; likewise the side of the neck (*Z. COLLI*), on a line with the second and third cervical vertebræ, extending forward towards the larynx.

In zoster brachialis the eruption usually first makes its appearance in the region of the lower cervical vertebræ, passing over to and down the arm to the elbow, or even farther. The flexor surface is commonly attacked. The hands are seldom invaded, but occasionally the fingers, and even the palm, may be attacked.

The thorax is another region often involved, the lesions forming parallel with the ribs, the intercostal nerves here determining the track of the eruption (*Z. DORSO-PECTORALIS*). Zoster in this locality generally gives rise to considerable pain and to difficulty in breathing; in its early stage the distress may readily be mistaken for incipient pleurisy. Sometimes the pain in multiple herpes involving the upper dorsal nerve tracts is similar to that of angina pectoris. The eruption may make its appearance after cessation of the pain of the so-called intercostal neuralgia. The abdominal region, supplied by the lower dorsal and lumbar nerves, is similarly affected (*Z. ABDOMINALIS*). The two last-named regions, thoracic and abdominal, are the seats of the most common local varieties of the disease, whence the name by which it is known, the words zoster, zona, cingulum, meaning a girdle or belt. The disease also occurs on both the anterior and the posterior surface of the thighs (*Z. FEMORALIS*), and on the buttocks, as well as upon the genitalia. It does not often appear below the knee. The feet, like the hands, are seldom attacked.

In very rare instances the distribution of the disease may be universal. Colombini² reports a remarkable case of zoster in which the eruption was universal, following the cutaneous nerves of the entire surface. The patient was a man thirty years of age, who three years previously had had an attack of malarial fever lasting several months. At the age of

¹ Lancet, July 7, 1888.

² Commentario clinico delle Malattie cutanee e genito-urinarie, Nos. 1, 2, 3, 4, 1893.

thirty he had another attack of malaria, accompanied by intense neuralgia and a burning sensation all over the body. Within a week of the beginning of the malaria the zoster appeared. Besides the cutaneous eruption, there were vesicles upon the conjunctivæ, and upon the nasal, oral, and anal mucous membranes.

The disease occurs in such a variety of etiological forms, and under such diverse conditions, that it is well to make a classification of them in order to comprehend the subject more completely. Leudet,¹ who has made a study of the disease, classifies its general forms as follows: First, it may be acute, transient, and without gravity, leaving behind it pains of longer or shorter duration, and disappearing without leaving traces. Another time the eruption may persist over a period of months, and the ulceration which succeeds the vesicles may be deeper, or after cicatrization the scars may ulcerate anew and the process repeat itself several times. At other times the ulceration is accompanied by redness, swelling, and a neuritic pseudo-phlegmon. Finally, the ulceration may cicatrize and give place to keloid. A second form is denominated relapsing zoster *in situ*. A third form is characterized by successive extensions upon several branches of the same nerve or upon contiguous nerves. The fourth form may be called "zoster at a distance," in which cases the eruption spreads out upon one or another distant nerve, or may be secondary to a lesion of a nerve-filament without apparent anatomical relation to the nerve supplying the region upon which the eruption manifests itself. This classification is similar to that put forth by Verneuil, who described three forms: 1st, the peripheric or centrifugal; 2d, the traumatic in proximity; 3d, the traumatic at a distance.

Anomalous forms of herpes are not very rare. Some of the cases may be classed with zoster and others with simple herpes or with pemphigus. All these cases have, however, a common origin in connection with nerve-influence or structural changes in the nerves. Thus, under the heading of "zoster gangrænosus atypicus," Kaposi² gives the notes of two cases of anomalous herpetic disease, both females of a nervous temperament.³ Although cases of this kind are sometimes reported under the title of zoster, they should in most instances, I think, be classed as "dermatitis vesiculosa neuro-traumatica," under which heading I have recorded a similar case⁴ of interest, especially in its bearings upon the pathology of cutaneous diseases in general.

The disease in adults is generally attended by a certain degree of ulceration and subsequent cicatrices, which in grave cases remain conspicuous for life. Sometimes the ulceration extends over considerable

¹ Archives Gén. de Méd., January, 1887.

² Wiener Klin. Wochens., March 7, 1889.

³ See also Archiv für Derm. u. Syph., 1889, p. 561, where will be found the notes of other similar cases, with the title "zoster hystericus."

⁴ International Med. Mag., March, 1892.

surface and deeply, constituting a complication ; occasionally deep-seated phlegmonous inflammation precedes the ulceration. Even in the milder cases scars usually occur, varying in extent with the degree of ulceration. They tend, however, to become obliterated or to become less marked as years go by. The younger the subject, as a rule, the less the scarring. In rare cases the scars become keloidal.

The disease seldom recurs. There are, however, some notable exceptions to this statement, of which I have seen a few remarkable examples, although most of the cases differed in some particulars from the usual form of the disease as noted in an average first attack. Cases of recurrent zoster (*ZOSTER RECIDIVUS*) are usually peculiar. E. von Düring¹ records a case of recurrent zoster femoralis, in which the first outbreak had been preceded three months by a severe septie phlegmonitis of the thigh. For several weeks before the zoster manifested itself there had been in the same region, at intervals of weeks, an erysipelatous inflammation. Each attack of zoster lasted about six weeks, being preceded for several days by malaise and elevation of temperature. Several weeks or months intervened between the attacks. Latterly the patient also suffered from attacks of herpes præputialis, which seemed to be vicarious, as the intervals between the recurrences on the thigh were during this period much longer. The patient had been under observation seven years. Hartzell² reports a case illustrating a recurrence of the disease at intervals of three or four weeks in different localities ; first it was a femoral, then a sacral, later a serotal, and lastly a double femoral zoster. Kaposi³ reports a case in which nine relapses occurred, all upon the right side of the body, but not in exactly the same region. The case was in every way exceptional. J. Grindon⁴ has analyzed a large number of the reported cases of so-called "recurrent zoster," and arranges them : I. "Chronic zoster," usually limited to one site. II. Cases recurring several times or frequently : *a*, frequent recurrences at the same area ; *b*, several recurrences at varying sites ; *c*, several recurrences at the same and again at a distant site ; *d*, single recurrences at the same or at a distant site. Many of the reported cases of recurrent herpes zoster are not true herpes zoster : this observation applies particularly to the "chronic," overlapping zoster-like eruptions, and especially those due to traumatism and chronic peripheral irritation. Grindon proposes to call these cases "zosteroids," inasmuch as they differ from zoster in some points and resemble it in others, and approach herpes simplex more nearly than zoster. Of the sixty-one

¹ Monatshefte für prakt. Derm., No. 11, 1888.

² Amer. Jour. Med. Sci., April, 1890.

³ Wien. Med. Woch., Nos. 25, 26, 1877 ; abstract in Lond. Med. Record, November 15, 1877.

⁴ Jour. Cut. and Gen.-Urin. Dis., May and June, 1895. Many of the cases cited in this article differ materially from common zoster.

cases of so-called recurrent zoster analyzed, only six appeared to be examples of true herpes zoster.

Neuralgic pain not infrequently remains about the seat of the eruption long after all traces of the eruption have disappeared. Sometimes, especially in elderly persons, it remains persistently for years. My colleague, Dr. W. F. Norris, of the University, has given me the notes of a case observed by him in which pain lasted in a patch on the back of an old man for ten years after the disease had disappeared. It was variable, but the patch was at all times painful to touch.

Etiology.—The disease occurs more frequently in winter and spring than in summer. It is met with in both sexes, and in infants and children as well as in adults, and also in the aged. From the statistics of the American Dermatological Association it appears that 2415 cases were encountered out of 204,866 cases of skin disease; but the disease is of much more frequent occurrence, I believe, than these figures imply. F. B. Greenough¹ reports that he had observed 255 cases during sixteen years in a total of 17,741 cases of general skin disease treated at the Boston City Dispensary, making less than one and a half per cent. The average annual frequency of the disease did not vary much in the sixteen years, and only on one occasion was there even an approach to a slight epidemic. The disease, Greenough found, occurred more frequently in the spring than at any other season.

The causes in many cases are involved in obscurity; but, on the other hand, a long list of causes are known to be capable of producing herpes zoster. Clinical experience teaches that their nature may be quite different. It is well recognized that in most cases the eruption is dependent upon an inflamed state of ganglia, nerve trunks, branches, or filaments. Instances of herpes zoster having its origin and seat in the ganglionic system are not rare.² The causes producing herpes zoster may be found in various conditions. Atmospheric influences, sudden exposure to cold and to damp winds or wet weather, and the sudden checking of profuse perspiration, have been observed to act as causes. Mechanical violence to a part, injuries to nerves, surgical operations, and unusual exertion have all been noted to give rise to the disease.³ As illustrative of how the disease may follow a simple wound, the case observed by Janin⁴ may be mentioned. The patient was a healthy boy, aged fourteen, who was pricked on the shoulder with a thorn. The puncture healed, but the site remained painful, the pain spread-

¹ Jour. Cut. and Gen.-Urin. Dis., 1889, p. 426.

² See Schwimmer's quoted observations in *Die neuropathischen Dermatosen*. Wien, 1883, p. 392.

³ See Picaud's monograph, *Des éruptions cutanées consécutives aux lésions traumatiques*, Paris, 1875; also Mitchell, *Injuries of Nerves, and their Consequences*, Phila., 1872, p. 153.

⁴ Brit. Med. Jour., August 30, 1890, p. 527.

ing over the whole side of the back and chest. Eight days after the accident an exceedingly severe intercostal zoster appeared, extending from the spinal column to the sternum. The disease here seems to have been reflex. I shall refer to this subject again in this chapter, and in connection with dermatitis neuro-traumatica. It may also be a result of gunshot wounds and other injuries; and may follow the use of the galvanic battery, and such minor operations as the extraction of a tooth and the opening of an abscess. Paget¹ has recorded a case of necrosis of the alveoli with partial loss of the teeth following zoster of the infra-maxillary region. Arsenic is capable of causing the disease, by setting up a neuritis, an observation which was first brought forward and insisted upon by Jonathan Hutchinson, of London. Nielsen,² of Copenhagen, has brought together many observations illustrating the power of arsenic to produce the disease. Many such cases have been noted by the author. Where due to this cause, the eruption may be regarded as a peculiar form of medicinal eruption. H. W. Blane³ gives a case in which the disease was apparently caused by the ingestion of a large dose of cayenne pepper, and Touton⁴ reports one following an intramuscular injection of salicylate of mercury.

The disease in many instances is undoubtedly infectious. This observation was first made by Rohé,⁵ in this country, and later by Erb,⁶ Landouzy,⁷ and H. Barth.⁸ A striking instance illustrative of infection is recorded by Walther.⁹ A student affected with zoster removed from his room. The next occupant shortly after was attacked by the same affection. This one also removed, and the third occupant, also a student, was immediately afterwards attacked by the same disease. The epidemic character of the disease has been noted by numerous observers, first among whom was Neligan,¹⁰ of Dublin. Gauthier¹¹ reports having observed during the months of February and March eleven cases, an unusual number in his experience. The atmospheric variations were remarkable, cold and hot days alternating, and catarrhal and rheumatic affections being frequent. Kaposi describes a similar epidemic in Vienna in 1888, and Weis records a like experience in Piek's clinic in Prague, fifteen cases having been observed in two months. Weis concludes that the disease must be regarded as infectious,

¹ Brit. Med. Jour., vol. ii., 1866, p. 402.

² Selected Monographs on Dermatology. New Sydenham Society, London, 1893.

³ N. Y. Med. Jour., March 12, 1892.

⁴ Abstract in Lon. Med. Record, 1890.

⁵ Archives of Dermatology, vol. iii., 1877.

⁶ Neurologisches Centralblatt, December 1, 1882.

⁷ Semaine Méd., September, 1883.

⁸ Union Méd., November, 1883.

⁹ Allgem. Med. Central-Zeitung, April 24, 1878. Quoted by Jamieson, op. cit.

¹⁰ Diseases of the Skin, p. 115. Phila., 1852.

¹¹ Lyon Méd., December, 1889.

favorable probably by climatic influences, and that it may appear at certain times in slight epidemics, and Gauthier takes a similar view.¹ Zimmerlin² describes an epidemic of herpes simplex facialis et labialis, especially the latter, occurring in a wing of a hospital in Basle, sixteen out of the thirty cases occurring in physicians and nurses. It has been observed to occur in connection with epidemic influenza, as reported by Finzi³ and others. Malaria may be a cause, as Colombini and others have shown. Cases have been reported by J. M. Winfield⁴ in which the plasmodium of Laveran was unmistakably present. Poisoning by carbonic oxide gas may produce the eruption, as the cases of Leudet⁵ show. Chronic pleurisy and tuberculosis of the lung seem to be, in the experience of some observers, frequent causes of zoster, Leudet reporting twenty such instances out of eighty-six cases of the disease; but Leroux,⁶ who has also called attention to the occurrence of zoster in tuberculous subjects, considers it rare in this disease.

Pathology.—Baerensprung⁷ was the first who considered the origin of the disease to be in the nerves, and the inflammation to be conducted through them to the skin. This observer, moreover, presented the view that the disease was one of the ganglionic system, and determined the primary seat of the affection to be in some cases in the spinal ganglia. In zoster of the trunk he found the intercostal nerves thickened and injected, with their spinal ganglia softened and altered in structure, the inflammation always extending from the ganglia to the periphery. Danielssen⁸ demonstrated in a case a marked reddened and swollen condition of an intercostal nerve, accompanied by an infiltration of the neurilemma, and Weidner⁹ recorded changes not unlike those observed by Baerensprung. Wyss¹⁰ gave a description of the changes encountered in a case which died in the early stage of zoster involving the eye and the forehead. The first branch of the trifacial nerve was broader, thicker, and softer than that of the opposite side of the body, and had a reddish-gray color. It was surrounded by an extravasation of blood along its course from the orbit to the ganglion Gasseri, this body being considerably larger and softer than normal, and not yellowish-white, but bright red, in color. The nerve was healthy at its origin from the brain, but was diseased as it entered the ganglion.

¹ The author would remark that no epidemic of this disease (worthy of note) has been recorded in Philadelphia during the past twenty-five years.

² Corresp.-Bl. f. Schweizer Aerzte, March 15, 1883.

³ Jour. Cut. and Gen.-Urin. Dis., p. 361, 1890.

⁴ New York Med. Jour., April 6, 1895.

⁵ Archives Gén. de Méd., 1865.

⁶ Thèse de doctorat, Paris; abstract in Brit. Jour. of Derm., vol. i. p. 168.

⁷ Die Gürtelkrankheit, Charité-Annalen, Bd. ix. p. 114. Berlin. A valuable contribution to the subject.

⁸ Baerensprung, loc. cit., p. 119.

⁹ Berl. Klin. Woch., No. 7, 1870. Archiv für Derm. und Syph., 1870.

¹⁰ Archiv der Heilk., iv. u. v., 1871. Archiv für Derm. und Syph., 1872.

The accounts given by these early observers of the pathological conditions agree in the main with the more recent studies of others. The disease, however, is not in all cases due to inflammation of a ganglion. It may have its seat at any point along the course of a nerve, and not infrequently originates in the peripheral distribution of nerves, as when produced by traumatism. It may also be due to disease of the spinal cord and of the brain, which would account for bilateral zoster and for the reported cases observed after poisoning by carbonic oxide gas. Cerebro-spinal fever, myelitis, sclerosis of the posterior columns, and progressive muscular atrophy are all known to be able to produce the disease. Growths and tumors pressing upon nerves must also be mentioned as being capable of giving rise to the disease: thus, Curschmann and Eisenlohr¹ report having found in a case multiple neuromata in the area of the affected nerves.

An observation of importance is that the disease may be produced also by reflex action. Some of the atypical cases of the disease in particular illustrate this pathology. In a case reported by Jewell,² a crural zoster seemed to follow a grave disease of the uterus, for as the latter improved the eruption and the intense neuralgic pain disappeared. It would seem, moreover, from clinical observation that both intercostal neuralgia and undoubted herpes zoster may be reflex affections due to irritation in the alimentary canal from such causes as tænia, as in a series of cases reported by E. C. Duryee.³

The disease is essentially an acute neuritis induced by various causes, acting for the most part upon the central nervous system. The cutaneous lesions are secondary. In many cases it has its seat in the cervical or spinal ganglia, as has been shown by post-mortem research, the neuritis descending and terminating upon the skin, with the production of more or less characteristic eruption. Mackenzie⁴ regards the eruption as being due to an affection of the roots of the nerves, probably the ganglion on the posterior root. Often more roots than one are affected, but they are generally neighboring roots. Bacrensprung's surmise that the seat of the disease in herpes zoster was probably in the ganglion of the posterior roots has been since shown to be true for many cases. Some observers (Reeklinghausen, and Epstein⁵) believe that the disease is one primarily of the vaso-motor nerves, and hence an angioneurotic disturbance which may be associated with diseases of the motor or sensory, spinal or cerebral, nerves. As already stated, however, herpes zoster rarely manifests itself in diseases characterized by motor disturbance.

¹ Archiv für Klin. Med., Bd. xxxiv. (1884) p. 409.

² Trans. Amer. Neurolog. Assoc., New York, 1875.

³ N. Y. Med. Jour., March 5, 1892.

⁴ Lancet, Jan. 5, 1895, p. 17.

⁵ Virchow's Archiv, Bd. cxxxix. Heft 3.

PATHOLOGICAL ANATOMY.

Biesiadecki¹ and Haight² were among the first to study the histopathology of the disease, and especially the formation of the vesicle. The latter found numbers of round, nucleated cells in and around the neurilemma (which were probably pus-cells), the nerves swollen, the medullary substance softened, and the axis cylinder eccentrically increased in size. According to Robinson,³ deep in the subcutaneous tissue—deeper than the inflammation producing the vesicles reaches—the round-cell infiltration is observed within and around the neurilemma, this being, in other words, a perineuritis, which can be seen to follow the course of the nerve branches.

The anatomy of the vesicle may now be described more fully. As Unna⁴ has shown, the vesicles of herpes zoster in structure are unlike those of most other vesicles. They are characterized by a peculiar form of epithelial degeneration which occurs typically developed. The same degeneration takes place in a less degree in varicella and in variola. I shall quote from this author as follows: In zoster all the cells affected by colliquation preserve their contour and even their size, but they lose their prickles, fall apart, and lie for the most part free and heaped upon one another at the base of the vesicle. They, moreover, lose their protoplasmic character and their consistence, become opaque, take the fibrin stain, and, continuing to swell, are converted through pressure and traction into the most varied and extraordinary forms. Deep down between the bare papillæ may be found in cells, only slightly larger than normal and globularly deformed, a ring-formed broken-down edge and a centre; the former is the protoplasm which has become cloudy, homogenized, and fibrinously degenerated with retraction of its prickles, the latter the swollen and likewise homogenized nucleus. Farther out occur globular but larger epithelial cells, with globular cavities, which contain in fibrinously degenerated thin expanded shells a large number of epithelial nuclei. Together with this nuclear fragmentation, the epithelial cells, which are transformed into hollow spheres, swell up greatly, and it is chiefly these which stamp the vesicle with its remarkable form.

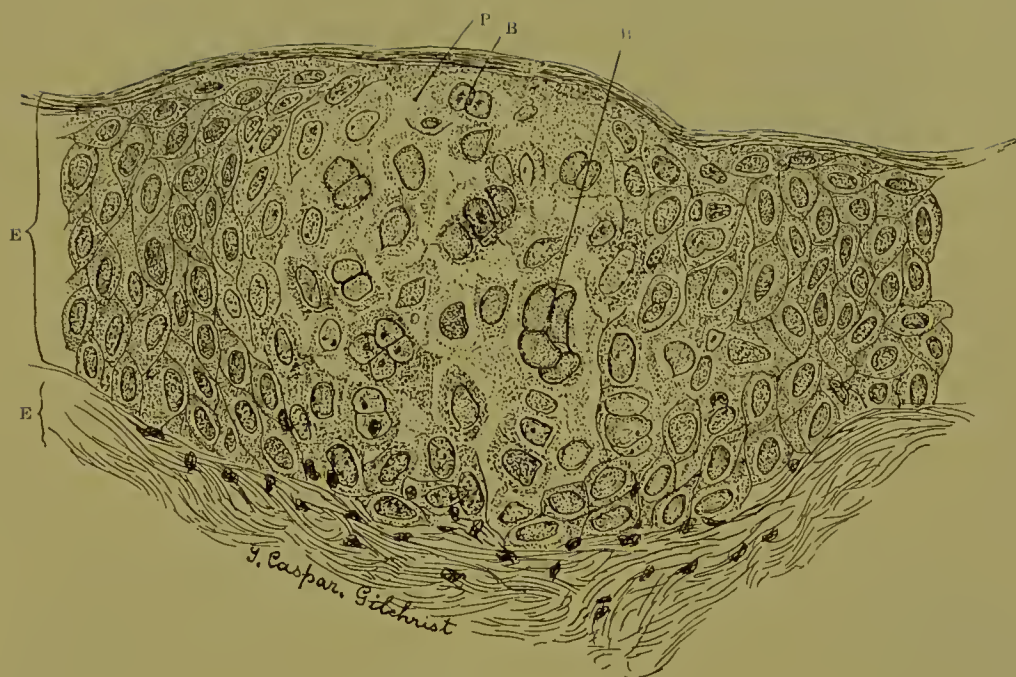
The commonest form is that of a round ball or balloon drawn out to one side, and therefore Unna proposes to name the whole degeneration "ballooning," in contrast to "reticulating." Other forms, as of "many-handled baskets, and of spiral tubes," are also met with, which taken together with their nuclear contents remind one of the nests of the weaver-bird. In the ballooning colliquation, in addition to the round balloons, there are seen cord-like, compressed epithelial cells, which hang down from various parts of the covering into the interior of the vesicle

¹ Beiträge zur phys. und path. Anat. der Haut, p. 245. Wien, 1867.

² Sitzungsab. der Kais. K. Akad. der Wissenschaften. Wien, 1868.

³ Manual of Dermatology, N. Y., 1884.

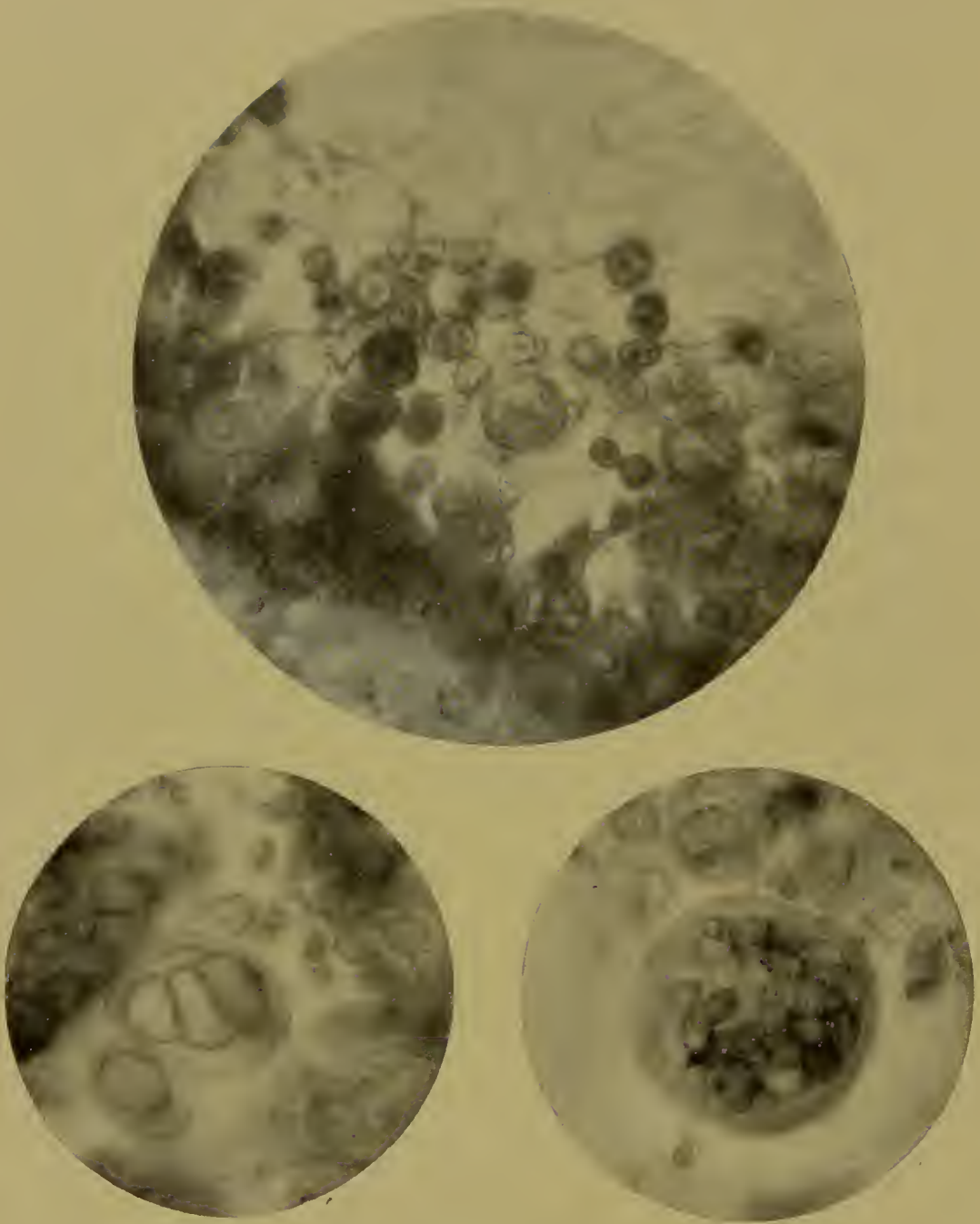
⁴ Op. cit., p. 150.



HERPES ZOSTER.

EPIDERMIS, SHOWING EARLIEST STAGE OF THE DISEASE.

In a case of herpes zoster occurring on the left side of the chest, one of the erythematous, split-pea sized patches, which had existed less than twelve hours, was excised. The drawing therefore represents the earliest change found in this disease. It was seen that the epidermis (E), which is almost the only portion represented here, was the seat of the first change. There was a serous exudation into this layer (s), with separation of the epithelial cells and the commencing formation of bodies (B) which resemble, and have been mistaken by some microscopists for, parasites (protozoa). These bodies, since they are in almost every particular exactly like the neighboring nuclei of normal epithelial cells, are to be considered collections of nuclei. Very few polynuclear leucocytes were seen either in the underlying corium (c) or in the epidermis. The blood-vessels in the deeper portion of the corium indicated that a hyperemie condition existed. Magnified about 500 diameters. (Dr. T. CASPAR GILCHRIST'S case, section, and description.)



HERPES ZOSTER.

BASE OF VESICLE, SHOWING DEGENERATED EPITHELIAL, PROTOZOA-LIKE CELLS.

Sections were made of vesicles with transparent contents two or three days old. The vesicles were situated in the middle and lower portions of the mucous layer. About the sides and floor of the interior of the vesicle were numerous round or ovoidal cells, some in process of division, about the diameter of normal epithelium, with sharply defined, usually double-contoured walls, with one or two nuclei. In addition there were other cells, much fewer in number, which, owing to a peculiar form of degeneration, resembled more or less closely certain forms of protozoa. These were round or oval, several times larger than the normal epithelium of the mucous layer, and had usually lost all traces of the prickles. The cell-body consisted of a broad ring without any external limiting membrane, which showed a finely reticulated structure. The greater portion of the cell was occupied by a large cavity surrounded by a moderately thick laminated capsule, within which were from three or four to a dozen or more rounded or ovoidal bodies having a beaded or dotted outline. These degenerated cells showed marked differences in their reaction to staining fluids. (Dr. M. B. HARTZELL's case, section, and description.)

and induce a form of septation. The slight lateral connection of the cells which distinguishes this degeneration from the "reticulating" does not permit of the formation of firm trabeculæ, and thus there exists no true partition of the vesicle. Thus it will be noted how vesicles closely seated together in a group may readily run together in zoster. At the height of the vesicular stage, in addition to the irregularly disseminated, variously formed, degenerated epithelial cells, the chamber of the vesicle is filled mainly with granular and thready fibrin. The liquid part is chiefly interepithelial, in contrast especially to the lesion of variola. The vesicle is rarely completely filled with leucocytes, desiccation with all its fibrinous and cellular contents into a firm crust taking place before that stage is reached.

The peculiar epithelial cells described resemble protozoa, and were considered by Pfeiffer¹ (who was the first to direct special attention to them) to be parasites. Török² also found these peculiar epithelial cells in the vesicles of herpes zoster. He described them as being strikingly large, and of various shapes,—round, oval, or polygonal,—with bright edges, and their granular contents enclosing several nucleiform bodies. They bore a resemblance to amœboid cells, but he traced their development from epithelia and white corpuseles. They were also described by Wasielewski,³ and by Hartzell,⁴ the latter observer regarding them as altered epithelium. T. C. Gilchrist⁵ found them in sections taken from a portion of skin which was in the erythematous stage preceding the formation of the vesicle. The earliest changes were observed to consist of a serous exudation into the epidermis, with separation of the epithelial cells and the formation of the peculiar bodies under discussion. They existed singly or in groups, and were most numerous at the bottom and sides of the vesicle. Some of the largest groups were found without the least evidence of any vesicular formation. They existed as well-defined bodies with a thick outline and granular contents. There was no evidence of any amœboid movements in them. He concludes that they are really nuclei of epithelial cells, probably large eleidin granules corresponding to the eleidin granules of the mucous layer. The author from his examination of these bodies does not see how they can be regarded as parasites.

It is well known that in many cases of herpes zoster the eruption does not follow the course of any special peripheral nerve. More than one cutaneous nerve is generally affected. The subject of herpes zoster

¹ "On Parasites in the Vesicular Contents of Varicella and Herpes Zoster, and their Relation to Similar Parasites in Smallpox." *Monatsh. für prakt. Derm.*, 1887, p. 589. See also, by the same writer, "Die Protozoa als Krankheitserreger." Jena, 1891.

² *Brit. Jour. of Derm.*, April, 1890, p. 120.

³ Zoster and its Position among the Infectious Diseases. Jena, 1892.

⁴ *Jour. Cut. and Gen.-Urin. Dis.*, Sept. 1894.

⁵ "The so-called Protozoa of Herpes Zoster." *Johns Hopkins Hosp. Reports*, vol. i., 1896.

and the limb plexuses of nerves has received study from James Mackenzie,¹ based upon records of over one hundred and twenty cases of zoster affecting the limbs, where the descriptions were sufficiently clear for the purpose. As Mackenzie has shown, in the limb plexuses the distribution of the cutaneous lesions is probably in accordance with the connection of nerve fibres at their origin in the spinal cord, and not with the peripheral distribution of any particular nerve. There are many irregularities in the distribution of the spinal nerves, and nerves supplying the skin overlap neighboring nerves at the periphery of their areas of distribution, as exemplified when zoster crosses the median line. Herringham's² results testify to the fact that the area of skin supplied by any given spinal root is subject to wide variation, although, as he says, "if a piece of skin is not supplied by the typical nerve the place is filled only by one of its neighbors, and not by a nerve far removed from it in the skin." The variation in the size of the area supplied by a given nerve root was also noted by C. A. Voigt³ many years ago.

The character of the pain and its radiation, according to Mackenzie, agree with those of disease of the visceral organs. It may be stated here that Baerensprung⁴ pointed out many years ago that the pain may in rare instances affect the same area of the side opposite that in which the eruption occurs. Mackenzie believes from his observations that the pain of visceral disease is always of a referred character,—that is, "always somatic, never splanchnic."

The relation between the tender areas in visceral disease and the areas affected in herpes zoster has also been studied by Henry Head,⁵ who found that the eruptive lesions upon the skin agreed in an extraordinary way with the areas of tenderness noted in visceral disease; and, furthermore, that if the herpetic areas are carefully marked and measured they are rarely if ever found to overlap. Head's investigations on disturbances of sensation with especial reference to the pain of visceral disease show that the central connections of the pain fibres from the skin and viscera are closely connected with one another, and that the central connections

¹ Herpes Zoster and the Limb Plexuses of Nerves. *Jour. of Path. and Bact.*, vol. i. (1893) p. 332. See also an article by Mackenzie, "Contribution to the Study of Sensory Symptoms associated with Visceral Disease." *Med. Chronicle*, vol. xvi. (1892) p. 293. A suggestive and valuable paper. See also in this connection the very important paper by Ross "On the Segmental Distribution of Sensory Disorders," in *Brain*, Jan. 1888, Mackenzie's results supporting many of Ross's conclusions.

² The Minute Anatomy of the Brachial Plexus. *Proceedings of the Royal Soc. of London*, 1887, vol. xli. p. 434.

³ Beiträge zur Dermato-Neurologie nebst der Beschreibung eines Systems neuentdeckter Linien an der Oberfläche des menschlichen Körpers. *Wien*, 1864.

⁴ *Annalen des Charité Krankenhaus*, Bd. x., Heft i. p. 51.

⁵ *Brain*, Parts I. and II., vol. xvi. (1893) p. 129. "On Disturbances of Sensation, with Especial Reference to the Pain of Visceral Disease." This is a valuable contribution both to general and to special pathology, and bears directly upon herpes zoster, and upon trophic affections generally.

of the nerves for heat and cold, and for trophic disturbances in the skin, though probably not connected, must also be in close association. On the other hand, the nerves for touch from the skin are widely separated centrally from those for pain. While the cutaneous distribution of touch overlaps considerably, the distribution of pain, that of heat, and that of cold do not overlap to any extent, agreeing with the distribution of the trophic nerves supplying the skin from each segment of the cord, which, as Head's investigations concerning the distribution of herpes zoster go to show, also do not overlap.

This observer thinks that the disease may be etiologically divided into two groups. In the first the eruption may be secondary to irritation of the spinal cord or to other nervous diseases, such as tabes dorsalis, or may be due to some nerve irritant, such as arsenic. In the second group the herpes stands for an acute specific disease, the onset being preceded by malaise and fever or a chill or by gastric disturbance, the temperature falling with the cutaneous outbreak.

Diagnosis.—The characters of herpes zoster are usually so well marked that no trouble arises in the diagnosis. The premonitory symptom of neuralgic pain points to this affection. The appearance of the vesicles, discrete, though generally crowded together in distinct groups upon more or less highly inflammatory bases, and the tendency to preserve their form intact, are characteristic. The vesicles are larger than those of eczema, varying in size from a pin-head to a split pea. The lesions of eczema always rupture, and ooze forth a serous or puriform fluid which rapidly forms crusts; in zoster there is no rupture of the lesions and no discharge. The subjective symptoms of zoster are pain, seldom absent, though variable, and a burning sensation, often with soreness; in eczema there are burning and itching, especially the latter. In some cases, however, there is itching in zoster.

Erysipelas can hardly be confounded with herpes zoster. The line of demarcation, the deep-reddish color of the inflammation, the subcutaneous œdema, and the constitutional symptoms, in erysipelas, together with the absence of grouped vesicles and of neuralgic pain, will serve to distinguish it from zoster.

Herpes zoster is to be diagnosed from herpes simplex occurring especially on the face and genitalia, chiefly by the presence of pain and the tendency to occur once only in a lifetime. Simple herpes inclines to repeated attacks in the same individual, and it also for the most part confines itself to certain regions, as the lips, nose, face, and genitalia, localities where herpes zoster is not commonly encountered. In simple herpes there are usually only one or two groups of vesicles; in zoster a number of distinct groups ordinarily occurs. Zoster is generally unilateral; simple herpes often shows itself on both sides or on the median line itself. Occasionally cases are met with which manifest a resemblance in their symptoms and course to herpes simplex. The cases of

this kind that I have seen seemed to be hybrid forms of diseases, and might be elassed either with herpes simplex or with herpes zoster. Instances of herpes zoster complicated with general herpes have occasionally been met with.¹

Treatment.—It will be borne in mind that the affection in most cases runs an acute course, terminating in spontaneous recovery; also that the disease is usually a benign one, except in cases where sensitive regions, as the head, are involved. Internal medication has not heretofore proved of much avail in influencing the course of the eruption. According to Ashburton Thompson² and Bulkley,³ zinc phosphide is of service in doses of one-sixth or one-third of a grain, to be given at the beginning of an attack and repeated every two or three hours. My own experience with it is that in some cases it seems to check the eruption and to mitigate the pain, but I do not think that it can be relied upon. The subcutaneous injection of morphine sulphate may generally be resorted to with benefit, and a combination of morphine a quarter of a grain and atropine sulphate one-hundredth or one-eightieth of a grain can be recommended even more highly. The pain may be relieved by ten- or fifteen-minim injections of chloroform, repeated, and by cocaine. In some cases quinine and arsenic prove useful, the latter being of special value in recurrent zoster, which sometimes it controls. Arsenic, if used, should be prescribed in full doses, as one-twentieth of a grain of arsenous acid four times daily, or in smaller doses repeated oftener. Antipyrin and allied drugs are not only valuable for the relief of the pain, but in some cases shorten the natural course of the disease.⁴ Potassium and sodium bromides may be indicated in some cases, employed in full doses every three hours. Sodium hyposulphite in five-grain doses every two or three hours, sodium salicylate, and camphor, in small doses often repeated, may prove serviceable.

External treatment is valuable, and should always be instituted. The parts should be protected from the irritation of the clothing, from the air, and from other external influences. Anodyne ointments, made with stramonium, opium, and belladonna, may be used. Alcoholic lotions containing camphor and carbolic acid, fifteen or thirty grains to the ounce, are useful, especially those prepared with strong alcohol. Alcohol is one of the best topical remedies, as I many years ago discovered. Leloir⁵ has directed attention to its value in a paper supported by his experience and investigations. It should be used of ninety-four per cent. strength, and may be applied with compresses, over which may be placed a sheet of gutta-percha tissue, oil-silk, a coating of liquor

¹ Brit. Jour. of Derm., vol. i. p. 168.

² Glasgow Med. Jour., Oct. 1874.

³ Arch. of Derm., Jan. 1876, p. 158.

⁴ In this connection see an article by Jennings, Lancet, Dec. 10, 1886.

⁵ Brit. Jour. of Derm., vol. iii. p. 269.

guttæ-perchæ, or a gelatin dressing. The applications should be repeated frequently during the day. To the alcohol may be added with advantage carbolic acid, menthol, thymol, resorcin, extract of cannabis indica, and hydrochlorate of cocaine, as follows: Resorcin, fifteen grains to the ounce; thymol, five grains to the ounce; menthol, fifteen grains, extract of cannabis indica, twenty-five grains to the ounce; cocaine, two to ten grains to the ounce; or tannin, fifty grains to the ounce. The powders and other preparations mentioned in herpes simplex may sometimes be employed with benefit, and cocaine, in a five per cent. ointment or in the form of a lotion, or a decoction of coca leaves, one to two drachms to the quart, may prove useful. I would speak particularly of the value of a strong compound zinc sulphide lotion, employed as in herpes simplex. In some cases I have found that it acts with remarkable promptness in relieving the local burning pain and in drying up the eruption. Carbolic acid and glycerin, one drachm to the ounce, may be painted on with benefit. Oil of peppermint may prove useful in allaying the pain, especially when the eruption is at its height. The fluid extract of grindelia robusta in the form of a strong lotion, from half a drachm to a drachm to the ounce, is sometimes useful. Painting the lesions with tincture of chloride of iron is well spoken of by Baudon,¹ Lailier, and Mereier;² and painting on for a few minutes a mixture of equal parts of tincture of aconite and chloroform sometimes causes the eruption to dry up speedily. Flexible collodion with morphine, in the strength of ten grains to the ounce, may also be used. Dusting powders containing camphor, one or two drachms to the ounce, are useful. They should be covered with absorbent cotton and bound to the skin. The ulcers are to be treated with such drugs as aristol, iodoform, acetanilid, antipyrin, and phenacetin, in powder or ointment form; they may also be advantageously painted with silver nitrate solution. A compound salicylic acid plaster,³ five or ten per cent. strength, may be employed with benefit, especially with cocaine. When the vesicles have dried up, Jamieson speaks well of dressing the skin with zinc-ichthyol salve-muslin, which is agreeable to the patient, favors rapid healing, and lessens the amount of ultimate scarring. It is especially useful in frontal zoster, in which scarring is to be guarded against by every means.

The disease, however, may, in my opinion, be most advantageously treated by the galvanic, or constant, current. In many cases it proves distinctly valuable. The author prefers it to any other mode of treatment. There is no remedy so valuable as the constant current in neuralgias generally, and in zoster in particular it is the best means of combating the disease. The negative pole is to be applied directly to the seat of the eruption and over the course of the nerves. I have usually

¹ Bull. de Thérapeutique, t. lxiii. p. 75.

² Thèse de Paris, 1877.

³ For formula, see Treatment of Eczema.

found from five to ten cells of a zine-carbon battery to be sufficient, the application being continued for fifteen or twenty minutes at each sitting, and repeated two or three times daily. A weak is more valuable than a strong current. There is no doubt that both the pain and the eruption may often be arrested or modified by its timely use, and even after the disease is at its height ease will generally be experienced from its application. The after-pains of zoster may be treated successfully in many cases in the same way. In cases in which the seat of the disease can be traced and localized it may be advisable to apply a wet cup (as over the region where the nerve makes its exit from the cord), abstracting an ounce or two of blood. Relief sometimes follows this procedure. Other modes of counter-irritation are also useful. The following prescription (much used by the late S. D. Gross in neuralgic affections generally) may in some cases be prescribed with benefit for persistent after-pain :

R Quininae sulph., $\mathfrak{z}\text{i}$;
Morphinae sulph., gr. iss ;
Strychninae, gr. i ;
Acid. arsen., gr. iss ;
Ext. aconit., gr. xv ;
M. Ft. in pil. no. xxx.

Prognosis.—A few weeks usually suffice for spontaneous cure, although in some cases the eruption and pain may linger a month or longer. The prognosis will depend upon the gravity of the attack and the region invaded. Hemorrhagic, gangrenous, and otherwise atypical cases are not very rare. Occurring about the head, the disease is usually severe, and the pain may be intense. Zoster of the orbital region may seriously involve or destroy the eye, and may prove fatal.



